HIGHLIGHTS

REVISION NO. 33 Jun 01/10

Pages which have been revised are outlined below, together with the Highlights of the Revision

CH/SE/SU C PAGES	REASON FOR CHANGE	EFFECTIVITY

CHAPTER 54

L.E.P. 1- 4 Revised to Reflect this revision indicating new,revised, and/or deleted pages

Printed in France

CHAPTER 54

NACELLES/PYLONS

LIST OF EFFECTIVE PAGES

N, R or D indicates pages which are New, Revised or Deleted respectively
Remove and insert the affected pages and complete the Record of Revisions and the Record of Temporary Revisions as necessary

CH/SE/SU	C	PAGE	DATE
RECORD			
OF TEMP.			
REVISION			
L.E.P.	R	1- 4	Jun01/10
T. of C.		1	Jun01/04
T. of C.		2	Jun01/04
T. of C.		3	Jun01/04
T. of C.		4	Jun01/04
T. of C.		5	Jun01/09
T. of C.		6	Jun01/08
54-00-00		1	Dec01/90
54-50-00 01		1	Jun01/04
54-50-00 01		2	Jun01/04
54-50-00 01		3	Jun01/04
54-50-00 01		4	Jun01/04
54-50-00 01		5	Jun01/04
54-50-00 01		6	Jun01/04
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54-51-00 01		16	Jun01/04
54-51-00 01		17	Jun01/04
54-51-00 01		18	Jun01/04
54-51-00 01		19	Jun01/04

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CH/SE/SU	C	PAGE	DATE	CH/SE/SU	C	PAGE	DATE	CH/SE/SU	C	PAGE	DATE
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54-51-00	02	2	Jun01/04	54-51-31	01	803	Jun01/04	54-51-72	01	811	Jun01/04
54-51-00	02	3	Jun01/04	54-51-31	02	801	Jun01/04	54-51-72	01	812	Jun01/04
54-51-00	02	4	Jun01/04	54-51-31	02	802	Jun01/04	54-51-72	01	813	Jun01/04
54-51-00	02	5	Jun01/04	54-51-43	01	401	Jun01/04	54-51-72	01	814	Jun01/04
54-51-00	02	6	Jun01/04	54-51-43	01	402	Jun01/04	54-51-72	01	815	Jun01/04
54-51-00	02	7	Jun01/04	54-51-43	02	401	Jun01/04	54-51-72	01	816	Jun01/05
54-51-00	02	8	Jun01/04	54-51-43	02	402	Jun01/04	54-51-72	01	817	Jun01/04
54-51-00	02	9	Jun01/04	54-51-43		601	Jun01/04	54-51-72	01	818	Jun01/04
54-51-00	02	10	Jun01/04	54-51-43		602	Jun01/04	54-51-72	01	819	Jun01/04
54-51-00	02	11	Jun01/04	54-51-43		603	Jun01/04	54-51-72	01	820	Jun01/04
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54-51-00	02	13	Jun01/04	54-51-72	01	402	Jun01/04	54-51-72	01	822	Jun01/04
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54-51-00	02	602	Jun01/04	54-51-72	01	602	Jun01/04	54-51-72	02	807	Jun01/04
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54-51-14	01	802	Jun01/04	54-51-72	01	806	Jun01/04	54-51-72	02	821	Jun01/04
54-51-14	02	801	Jun01/04	54-51-72	01	807	Jun01/04	54-51-72	02	822	Jun01/04

CH/SE/SU	C	PAGE	DATE
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54-56-41	02	602	Jun01/06
54-56-41	02	603	Jun01/06

CHAPTER 54

NACELLES/PYLONS

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1. Nacelles Section
   (Ref. 71-10-00, P. Block 1).

2. Pylons
   (Ref. 54-50-00, P. Block 1).

1. General

The role of the engine pylon on each wing is :
- to support the engine
- to transmit loads to wing center box
- to support and route electrical wiring, hydraulic and fuel lines up to the engine and all return lines.

Each engine pylon consists of a main frame, an auxiliary structure and main/auxiliary attach fittings. All engine cowls are attached to engine pylon main frame or auxiliary structure forward section.
The main frame and auxiliary structure forward section are identical for each pylon.

2. Description

(Ref. Fig. 001)
(Ref. Fig. 002)

A. Engine Pylon Structure

The engine pylon consists of two main structures which serve for the routing of the various systems from wing to engine and secure engine under wing.
The two structures are the following :
- the main frame
- the auxiliary structure

(1) Main frame

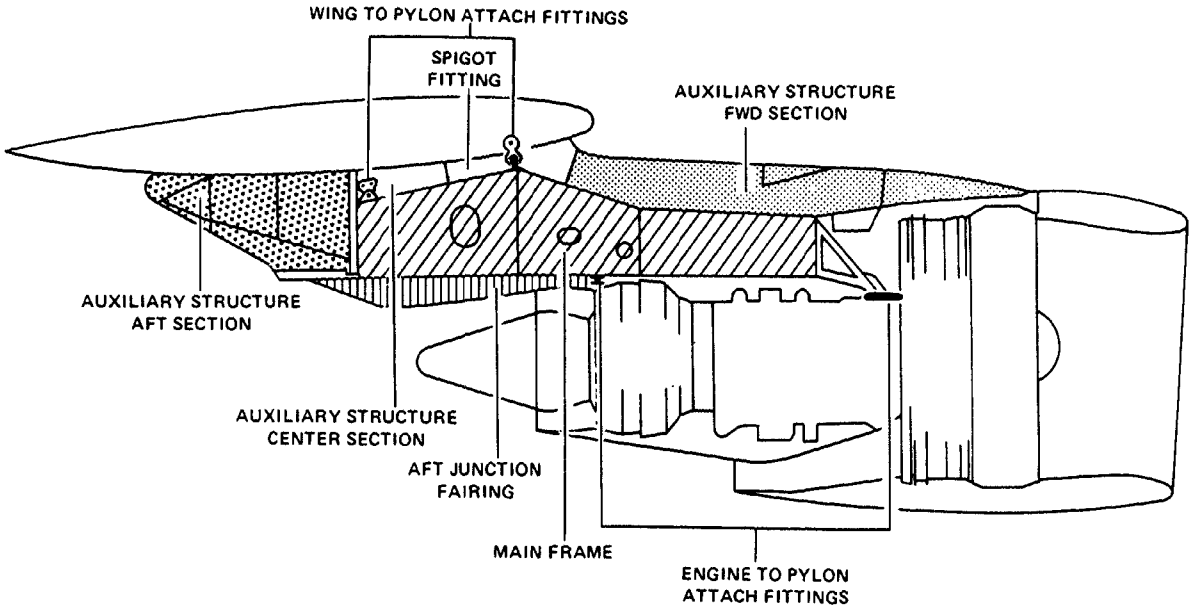
The main frame is the engine pylon primary structure which supports the engine and forms the junction with the wing center box.
The main frame is fitted with doors which enable access to be gained to the various systems routed in this area and with attach fittings providing pylon-to-engine and pylon-to-wing attachment.
The engine pylon is attached in two points to the wing spar box.
The engine is attached in two points to the engine pylon. Engine cowls are hinged to and supported by auxiliary fittings.
The main frame under its forward section is equipped with a hydraulic and fuel junction base plate.

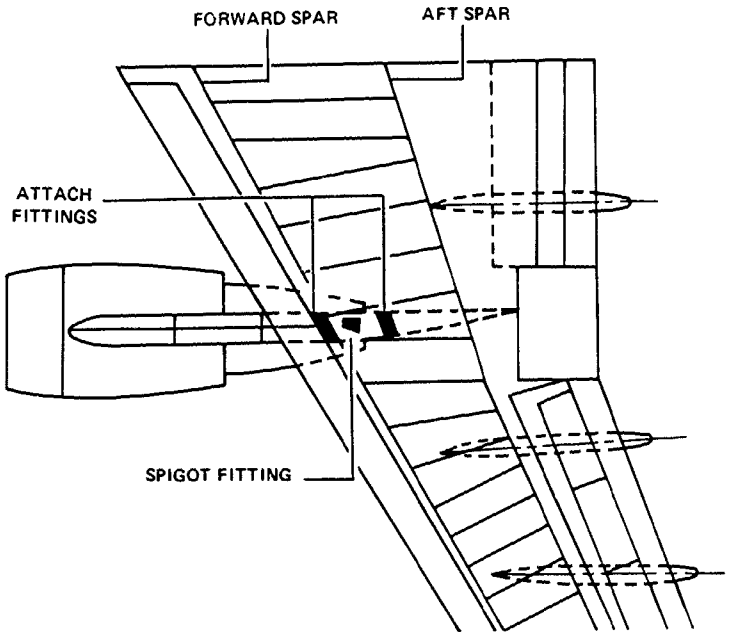
(2) Auxiliary structure

The auxiliary structure is the engine pylon main fairing and houses most of the system components.
The auxiliary structure is divided into three sections :
- the auxiliary structure forward section (between RIBA1 and RIB10A)
- the auxiliary structure center section (between RIB10A AND RIB18)
- the auxiliary structure aft section (between RIB18 and aft tip)

(a) Auxiliary structure forward section (RIBA1 to RIB10A)

It provides the aerodynamic profile between the engine nose cowl upper section and the wing leading edge. It is fitted with two pressure relief doors which avoid damage in the event of pipe bursting and with removable panels giving access to the various system routing.
The centilever beam of this structure is fitted with an electrical junction box between RIBA7 and RIBA5 on left side, a center junction box located above pylon-to-engine attach fitting.





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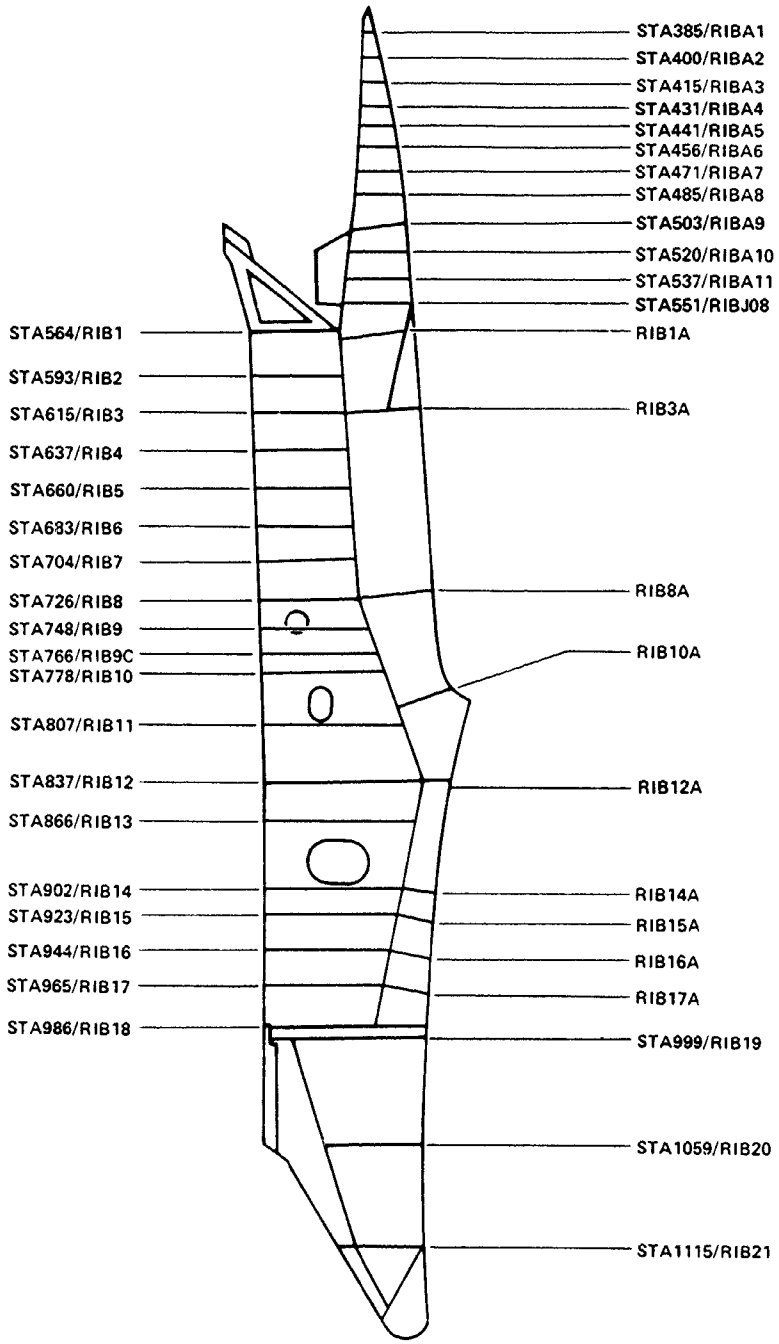
Engine Pylon
Figure 001



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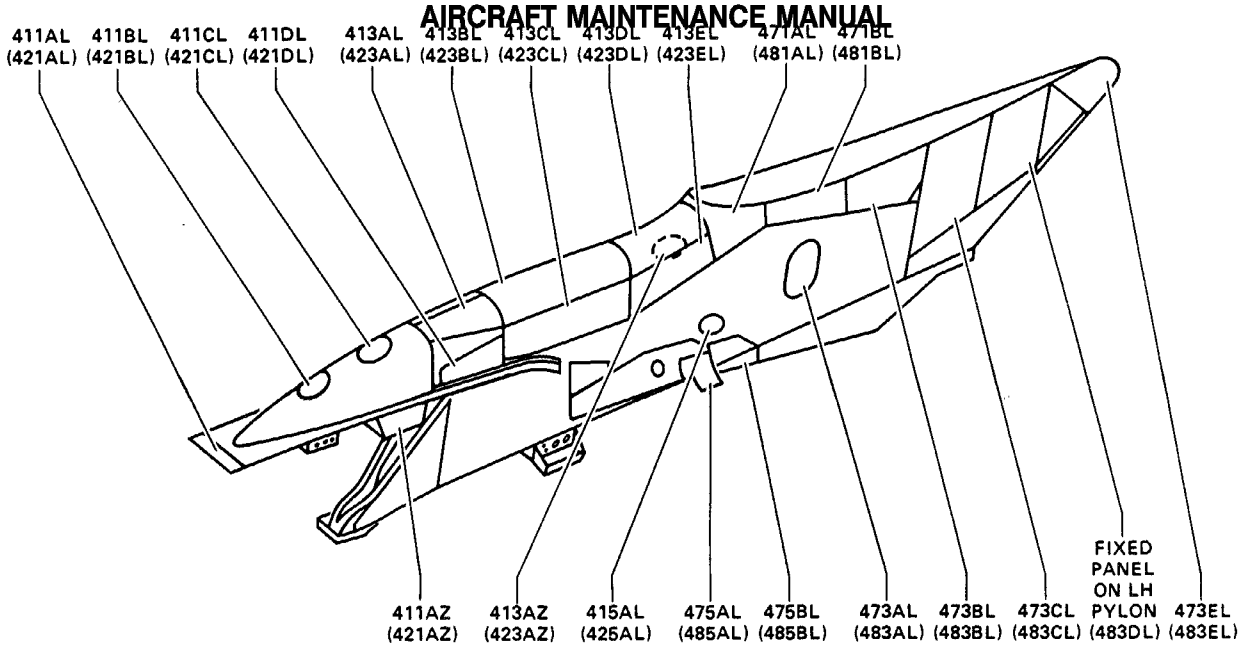
Engine Pylon - Zoning
Figure 002

(b)Auxiliary structure center section
It provides junction between the wing lower surface and the main frame. It is fitted with removable fillets, thus resulting in an adequate aerodynamic profile. The auxiliary structure center section is equipped with a pressure relief door reducing damage due to bursting of air bleed duct routing in the vicinity.

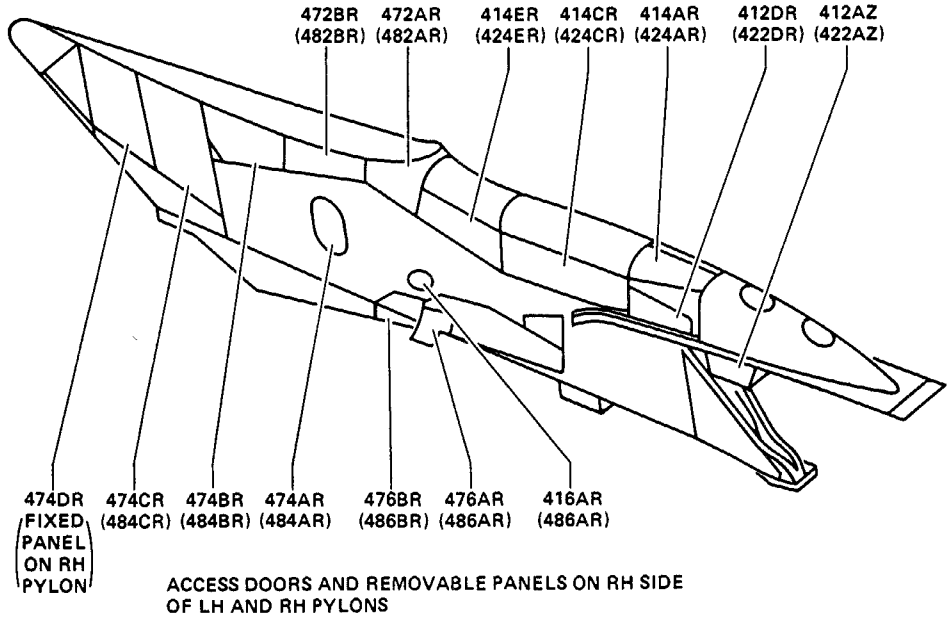
(c)Auxiliary structure aft section
It is attached to the wing lower surface and improves fillet aerodynamic contour.
It is fitted with removable panels giving access to the circuit routing in this area.
A fairing located under the main frame ensures continuity of aerodynamic profile between the main frame and the engine nozzle.

(3)Access doors and removable panels
Access to the various equipment located inside the pylon is obtained by opening main structure access doors or by removing auxiliary structure skin panels. The location of the various access doors and panels, together with additional descriptions, are given in table 001 and (Ref. Fig. 003)

NOTE : Access door 413AZ (423AZ) (Ref. Fig. 003) gives access to throttle control primary transmission relay. The access door is located inside the pylon, under the bleed air precooler outlet duct.
Air duct removal is required for door opening (Ref. 36-11-00, P. Block 401)



ACCESS DOORS AND REMOVABLE PANELS ON LH SIDE OF LH AND RH PYLONS
NOTE : DESIGNATIONS OF RIGHT PYLON DOORS AND REMOVABLE PANELS ARE BETWEEN PARENTHESIS



ACCESS DOORS AND REMOVABLE PANELS ON RH SIDE OF LH AND RH PYLONS
NOTE : DESIGNATIONS OF RIGHT PYLON DOORS AND REMOVABLE PANELS ARE BETWEEN PARENTHESIS

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Engine Pylon - Access Doors and Removable Panels
Figure 003

Table 001

ACCESS DOOR OR REMOVABLE PANEL IDENTIFICATION	MAINTENANCE MANUAL SECTION REFERENCE
411AL (421AL)	(Ref. 54-52-00)
411AZ (421AZ)	
411BL (421BL)	
411CL (421CL)	
411DL (421DL)	
412AZ (422AZ)	
412DR (422DR)	
413AL (423AL)	
413AZ (423AZ)	
413BL (423BL)	
413CL (423CL)	
413DL (423DL)	
413EL (423EL)	
414AR (424AR)	
414CR (424CR)	
414ER (424ER)	
415AL (425AL)	(Ref. 54-51-00)
416AR (426AR)	

Table 001

ACCESS DOOR OR REMOVABLE PANEL IDENTIFICATION	MAINTENANCE MANUAL SECTION REFERENCE
471AL (481AL) 471BL (481BL) 472AR (482AR) 472BR (482BR)	(Ref. 54-53-00)
473AL (483AL)	(Ref. 54-51-00)
473BL (483BL)	(Ref. 54-53-00)
473CL (483CL) (483DL) 473EL (483EL)	(Ref. 54-54-00)
474AR (484AR)	(Ref. 54-51-00)
474BR (484BR)	(Ref. 54-53-00)
474CR (484CR) 474DR	(Ref. 54-54-00)
475AL (485AL) 475BL (485BL) 476AR (486AR) 476BR (486BR)	(Ref. 54-51-00)

NOTE : Installation gaps for the various panels are given in 54-50-00, P. Block 601

(4)Pressure relief doors

Some access doors have pressure relief doors or valves limiting damage in case of pipe bursting.

Identification of the access doors and their detailed description is given in Table 002.

Table 002

IDENTIFICATION OF PANEL FITTED WITH PRESSURE RELIEF DOOR	MAINTENANCE MANUAL SECTION REFERENCE
411DL (421DL)	(Ref. 54-52-00)
413AL (423AL) 414AR (424AR)	(Ref. 54-52-00) and (Ref. 54-52-61)
471BL (482BR)	(Ref. 54-53-00)

NOTE : Installation gaps for the various panels are given in 54-50-00, P. Block 601).

B. Engine Pylon Layout
(Ref. Fig. 004, 005, 006)
(Ref. Fig. 007, 008)
For safety purposes, the engine pylon is divided into six compartments (A to F), each housing a particular type of equipment.
Engine compartment layout and cooling air pressure have been designed so that hydraulic fluid or fuel leakage cannot come into contact with an ignition source. Pylon area in contact with the combustion chamber is protected by a torch flame shield and a fire detection system. Pylon area in contact with turbine core is protected by a heat shield.

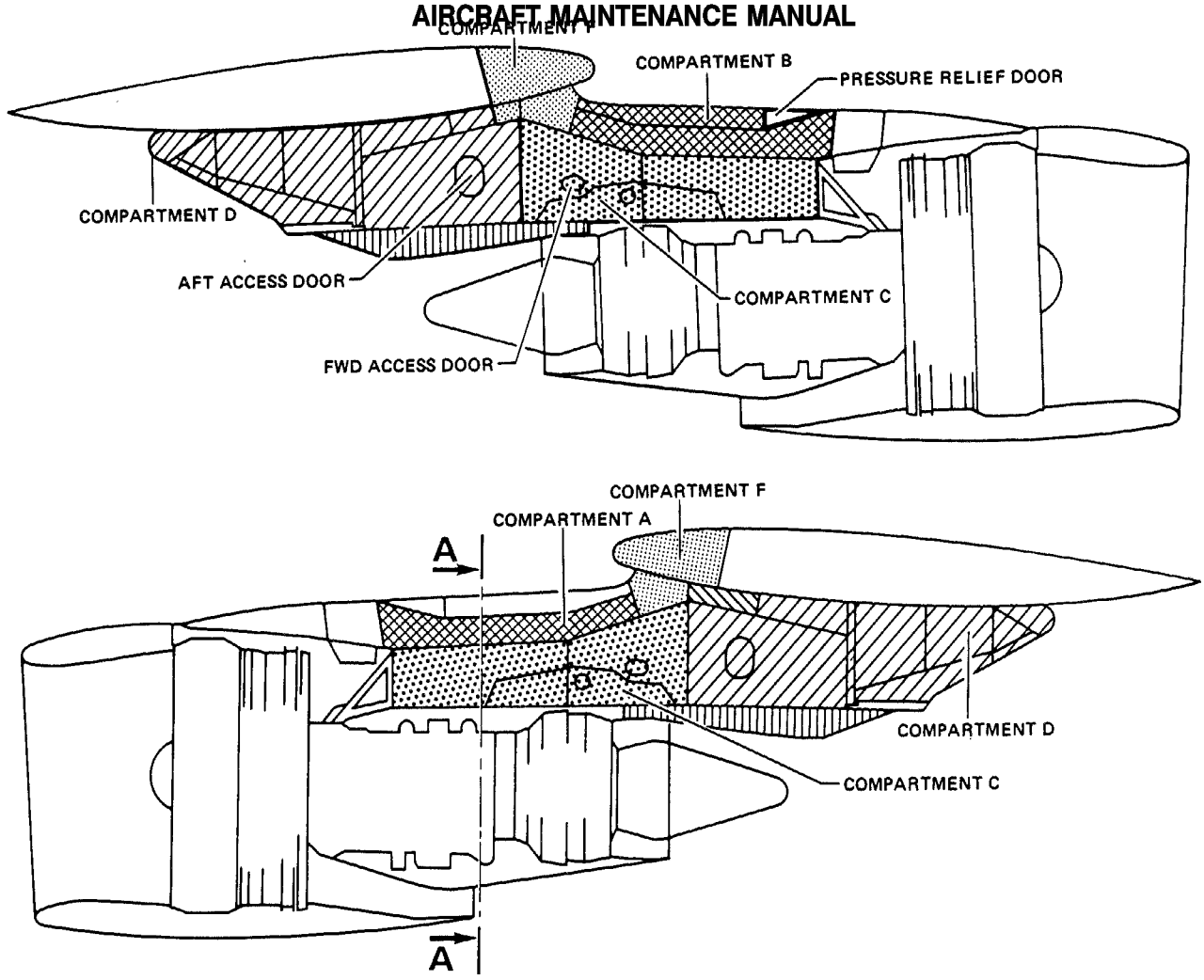
(1) Compartment A
This compartment located at the L upper forward part of the engine pylon between RIBJ08 and RIB10A.
This compartment includes :
- pressure lines for thrust reverser cowl opening system
- the upstream section of the fuel line running from wing to engine
- thrust and remove interlock flexible controls.

Compartment A is cooled by air bled from fan discharge on LH side of engine pylon as soon as the engine starts running.
To reduce damage due to hydraulic or fuel pipe failure, compartment A outer fairing is fitted with a pressure relief door at lever of RIB1A.
Cooling air is vented through compartment A drain system which also vents overboard fuel, hydraulic fluid or water leakage at level of engine pylon lower fairing (compartment E).

(2) Compartment B
Compartment B is located at the R upper forward part of engine between RIB A9 and RIB 10A.
It is composed of two separated compartments B1 and B2.
- In center compartment B1 are located :
  - the hot air bleed duct
  - the bleed air precooler
  - the primary transmission mechanical section
  - engine starter pneumatic duct.
  - the throttle control heating system.
- Compartment B2 located on R side of compartment B (approximately symmetrical to compartment A with respect to pylon centerline) includes wiring routed to center and forward electrical junction boxes.

This compartment is cooled by air bled from fan discharge by a ram air inlet on R side of engine pylon.
Air is discharged overboard through a vent duct located at the R aft section of the area. Vent duct is fitted with an overheat thermoresistor calibrated at 200°C which controls the temperature of discharged air.
In the event of pipe bursting, two pressure relief doors blow open when pressure is higher than 200 mb.

(3) Compartment C
Compartment C located below compartments A and B includes :
- sections of hydraulic rigid pipes without connections
- cold air inlet duct of the bleed air precooler
- compartment A and F drain lines without connections



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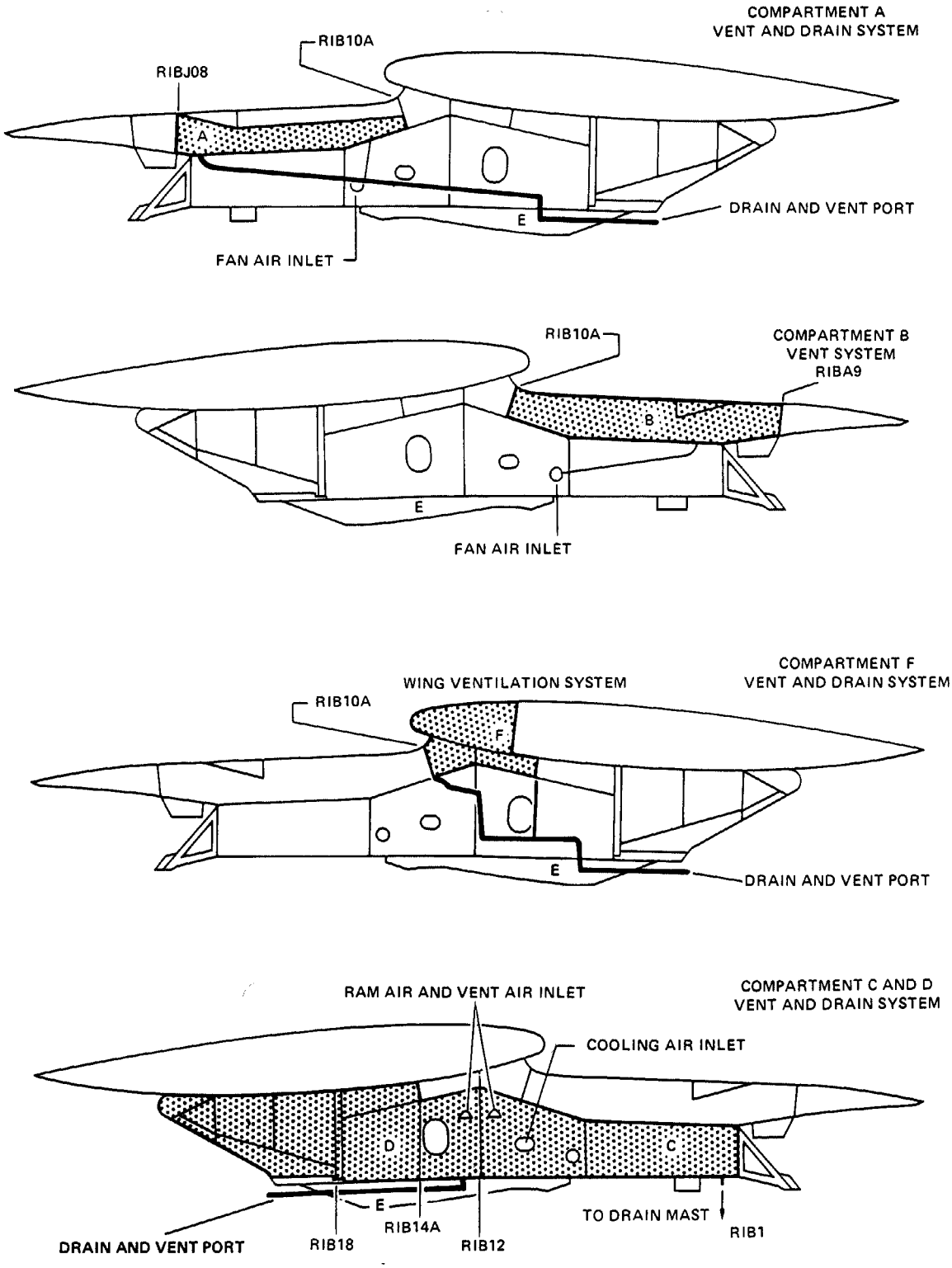
Engine Pylon - Compartment Description
Figure 004



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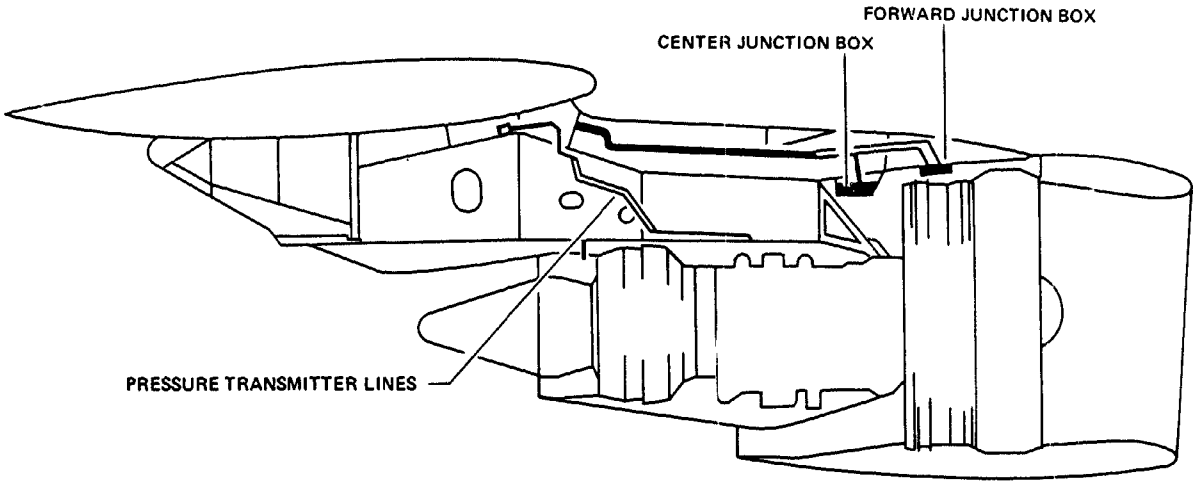
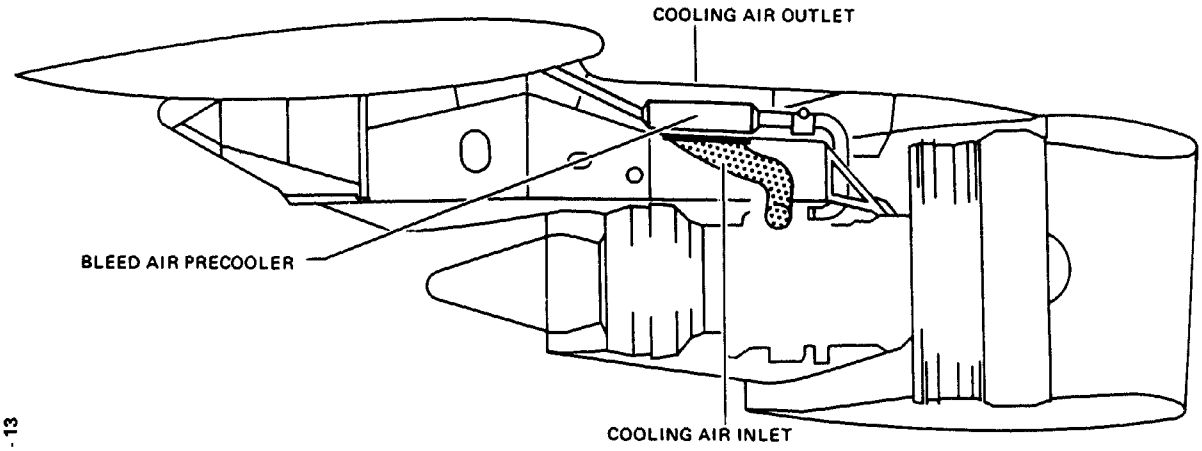
Engine Pylon - Cooling and Drainage
Figure 005





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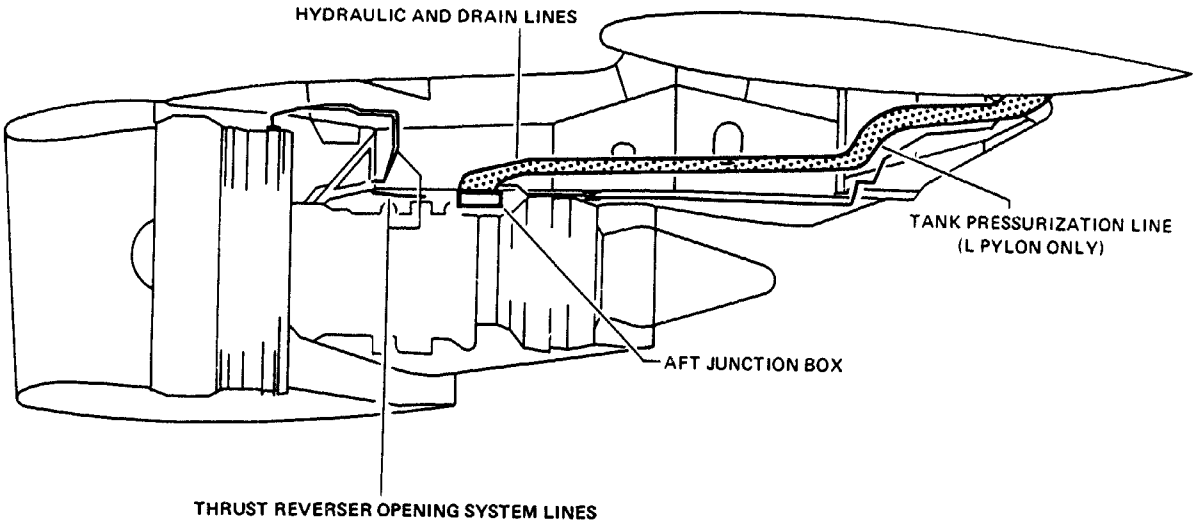
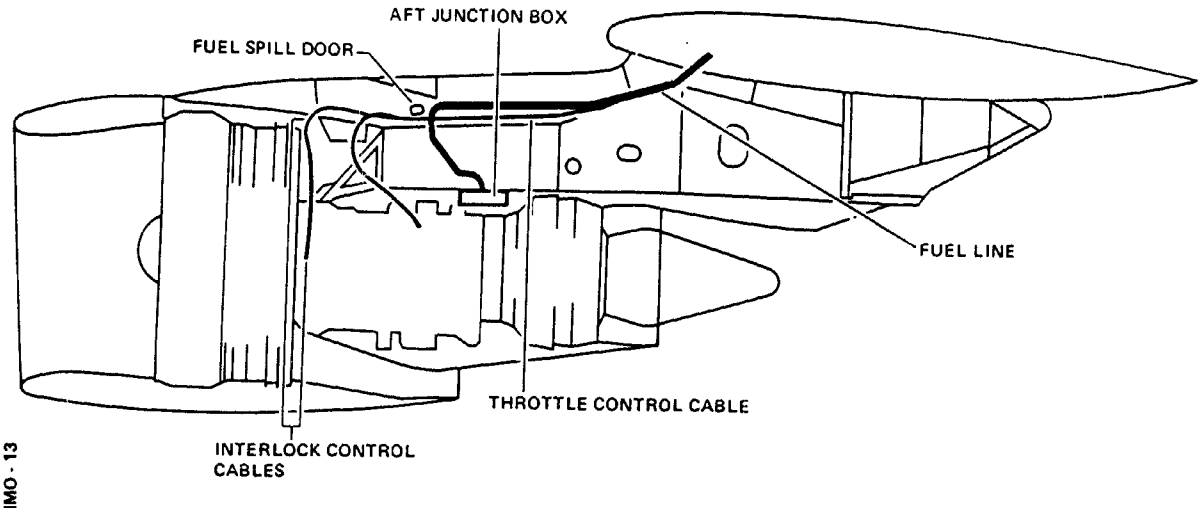
Engine Pylon - Inner Components
Figure 006





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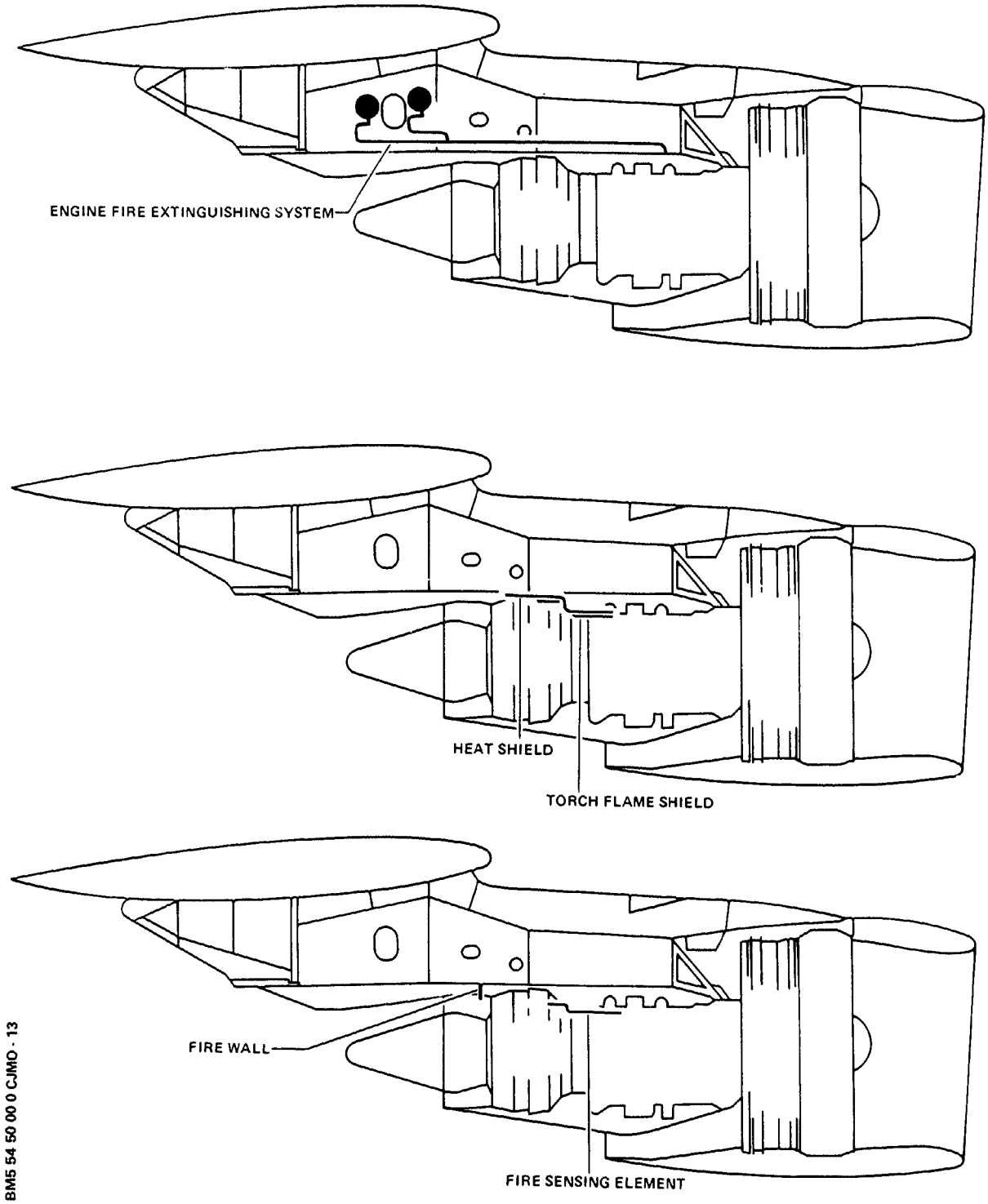
Engine Pylon - Inner Components
Figure 007



Engine Pylon - Inner Components
Figure 008

- compartment A and B vent ducts
- engine fire extinguishing system center section
- pressure transmitter lines of the air bleed system
- downstream section of the fuel line running from wing to engine
- pressure lines for thrust reverser cowl opening system.

This compartment is cooled in flight only by means of an independent ram air inlet located on R side of engine pylon.
The forward access door located on R side of engine pylon is provided with a cooling air inlet to ensure additional ventilation as soon as the engine starts running.
Compartment C is drained via a line routed to the engine drain mast.

(4)Compartment D

Compartment D located aft of compartment C includes :

- the hydraulic line sections with connections and the hydraulic hoses.
- the two engine fire extinguisher bottles and the fire extinguishing system aft section.
- compartment A and F drain lines.
- electrical cables connected with the two fire extinguisher bottles.
- hydraulic tank pressurization line (L side pylon only)

Compartment D is cooled by air bled by a ram air inlet located on R side of engine pylon when the engine is running.
Compartment D is drained by means of a line leading to the trailing edge at level of lower fairing.

(5)Compartment E

Compartment E located between compartment D and engine nozzle includes :

- compartment A, F and D drain lines without connections
- hydraulic tank pressurization line

This compartment is not provided with cooling and drainage.

(6)Compartment F

Compartment F serves as a junction between wing slat and engine pylon.
It is located above compartments C and D and aft of compartments A and B.
It includes :

- bleed air ducts
- throttle mechanical controls
- shrouded fuel lines
- forward pylon-to-wing attach fitting.

Compartment F is cooled by air passing through the wing slat.
Air and any residual fluid (water or fuel) are discharged overboard via the drain line leading to the engine pylon aft junction fairing.

1. General

The role of the engine pylon on each wing is :
- to support the engine
- to transmit loads to the wing center box
- to support and route electrical wiring, hydraulic and fuel lines up to the engine and all return lines.

Each engine pylon consists of a main frame, an auxiliary structure and main/auxiliary attach fittings.
The fan cowl is attached to the cantilever structure. The thrust reverser cowl is attached to the pylon cantilever and main structures.
The main frame and auxiliary structure forward section are identical for each pylon.

2. Description

(Ref. Fig. 001)
(Ref. Fig. 002)

A. Engine Pylon Structure

The engine pylon consists of two main structures which serve for the routing of the various systems from wing to engine and secure the engine under the wing.
The two structures are the following :
- the main frame
- the auxiliary structure

(1) Main frame

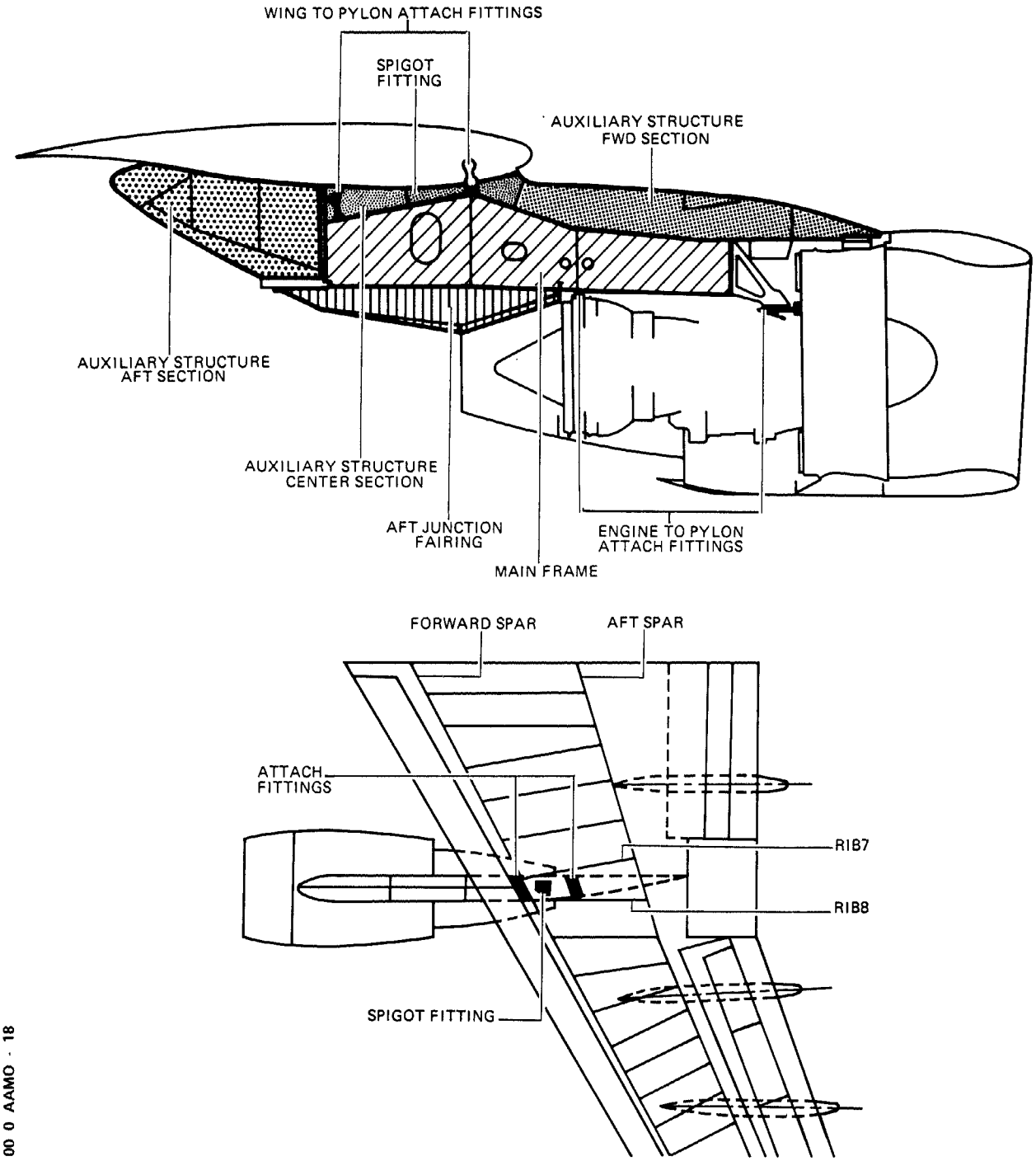
The main frame is the engine pylon primary structure which supports the engine and forms the junction with the wing center box.
The main frame is fitted with doors which enable access to be gained to the various systems routed in this area and with attach fittings providing pylon-to-engine and pylon-to-wing attachment.
The engine pylon is attached at two points on the wing spar box.
The engine is attached at two points on the engine pylon. Engine cowls are hinged and supported on auxiliary fittings.
The main frame under its forward section is equipped with a hydraulic and fuel junction base plate. At this level, the lines are fitted with heat insulating sleeves.

(2) Auxiliary structure

The auxiliary structure is the engine pylon main fairing and houses most of the system components.
The auxiliary structure is divided into three sections :
- the auxiliary structure forward section
- the auxiliary structure center section (between RIB10A and RIB18)
- the auxiliary structure aft section (between RIB18 and aft tip)

(a) Auxiliary structure forward section (RIBJ1 to RIB10A)

It provides the aerodynamic profile between the engine nose cowl upper section and the wing leading edge. It is fitted with two pressure relief doors which avoid damage in the event of air bleed duct bursting and with removable panels giving access to the various system routing.
The cantilever beam of this structure is fitted with two electrical



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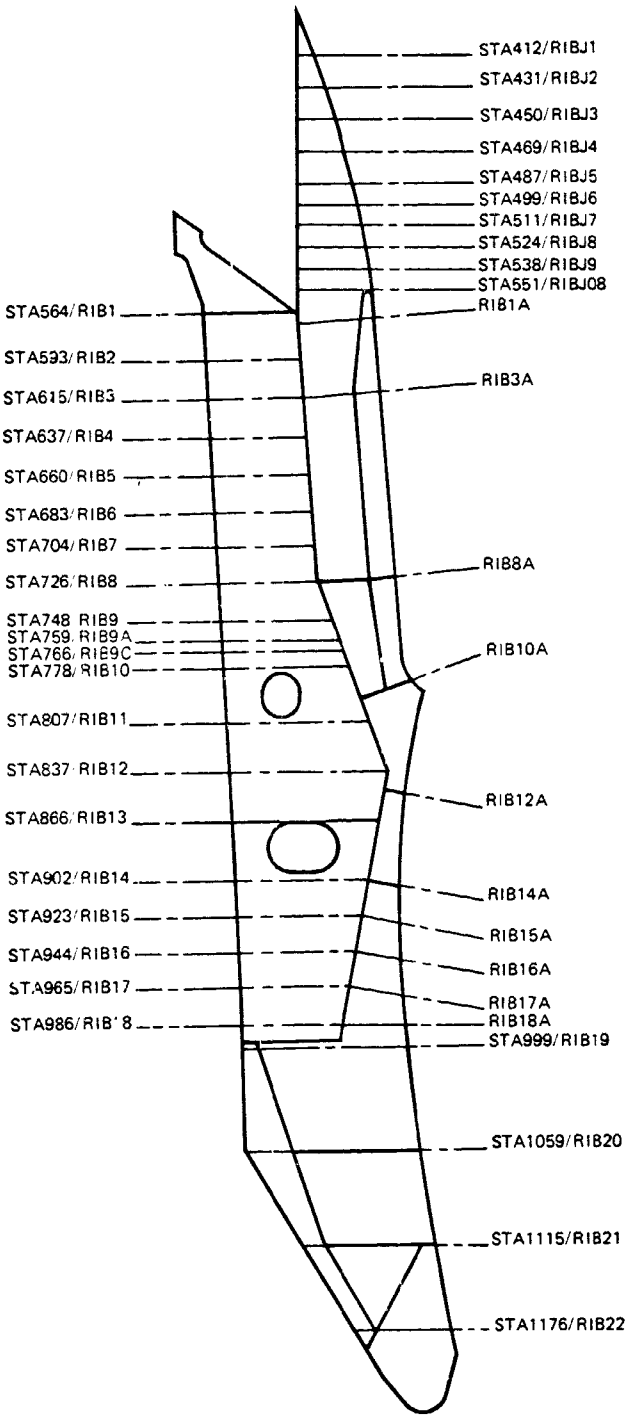
Engine Pylon
Figure 001



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Engine Pylon - Zoning
Figure 002

junction boxes at the air inlet (one on left side, the other on right side), a center box located above the pylon-to-engine attach fitting.

(b)Auxiliary structure center section

It provides junction between the wing lower surface and the main frame. It is fitted with removable fillets, thus resulting in an adequate aerodynamic profile. The auxiliary structure center section is equipped with a pressure relief door reducing damage due to bursting of air bleed duct routing in the vicinity.

(c)Auxiliary structure aft section

It is attached to the wing lower surface and improves fillet aerodynamic contour.

It is fitted with removable panels giving access to the circuit routing in this area.

A fairing located under the main frame ensures continuity of aerodynamic profile between the main frame and the engine nozzle

R (3)Access doors and removable panels

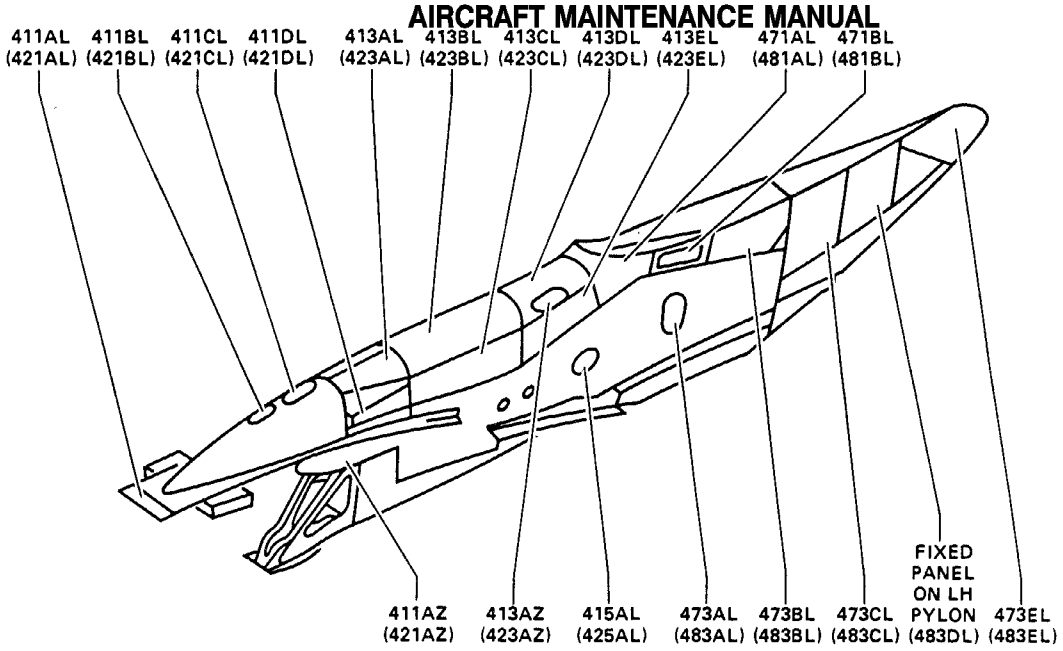
R Access to the various equipment located inside the pylon is obtained by opening main structure access doors or by removing auxiliary structure skin panels. The location of the various access doors and panels, together with additional description, are given in table 001 and (Ref. Fig. 003)

R NOTE : Access door 413AZ (423AZ) (Ref. Fig. 003) gives access to throttle control primary transmission relay. The access door is located inside the pylon, under the bleed air precooler outlet duct.

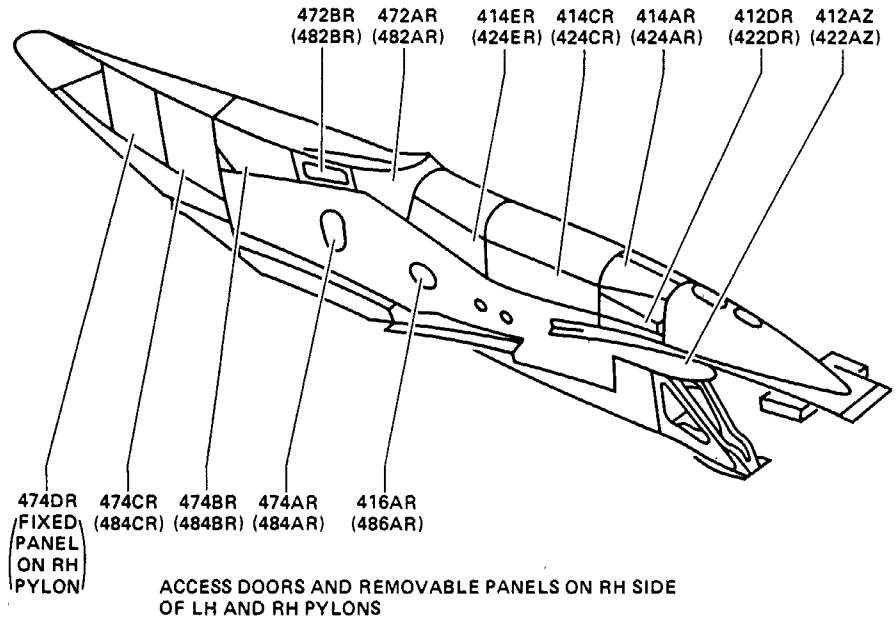
R Air duct removal is required for door opening (Ref. 36-11-00, P. Block 401)

R Table 001

ACCESS DOOR OR REMOVABLE PANEL IDENTIFICATION	MAINTENANCE MANUAL SECTION REFERENCE
411AZ (421AZ)	(Ref. 54-52-00)
411AL (421AL)	
411BL (421BL)	
411CL (421CL)	
411DL (421DL)	
412AZ (422AZ)	
412DR (422DR)	
413AL (423AL)	
413AZ (423AZ)	
413BL (423BL)	
413CL (423CL)	
413DL (423DL)	
413EL (423EL)	
414AR (424AR)	
414CR (424CR)	
414ER (424ER)	



ACCESS DOORS AND REMOVABLE PANELS ON LH SIDE
OF LH AND RH PYLONS
NOTE : DESIGNATIONS OF RIGHT PYLON DOORS AND
REMOVABLE PANELS ARE BETWEEN PARENTHESIS



ACCESS DOORS AND REMOVABLE PANELS ON RH SIDE
OF LH AND RH PYLONS
NOTE : DESIGNATIONS OF RIGHT PYLON DOORS AND
REMOVABLE PANELS ARE BETWEEN PARENTHESIS

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R Engine Pylon - Access Doors and Removable Panels
Figure 003

TABLE 001

ACCESS DOOR OR REMOVABLE PANEL IDENTIFICATION	MAINTENANCE MANUAL SECTION REFERENCE
415AL (425AL) 416AR (426AR)	(Ref. 54-51-00)
471AL (481AL) 471BL (481BL) 472AR (482AR) 472BR (482BR)	(Ref. 54-53-00)
473AL (483AL)	(Ref. 54-51-00)
473BL (483BL)	(Ref. 54-53-00)
473CL (483CL) (483DL) 473EL (483EL)	(Ref. 54-54-00)
474AR (484AR)	(Ref. 54-51-00)
474BR (484BR)	(Ref. 54-53-00)
474CR (484CR) 474DR	(Ref. 54-54-00)

NOTE : Fits and clearances for the various panels are given in (Ref. 54-50-00, P. Block 601)

(4)Pressure relief doors

Certain access panels are equipped with pressure relief doors or panels to avoid serious damage in the case of burst pipes.

For identification of these doors and a more detailed description refer to Table 002 and (Ref. Fig.).

IDENTIFICATION OF PANEL FITTED WITH PRESSURE RELIEF DOOR	MAINTENANCE MANUAL SECTION REFERENCE
411DL (421DL)	(Ref. 54-52-00)
413AL (423AL) 414AR (424AR)	(Ref. 54-52-00) and (Ref. 54-52-61)
471BL (482BR)	(Ref. 54-53-00)

NOTE : Fits and clearances for the various panels are given in (Ref. 54-50-00, P. Block 601)

Pressure Relief Doors
Table 002

B. Engine Pylon Layout
(Ref. Fig. 004)
(Ref. Fig. 005)
(Ref. Fig. 006)
(Ref. Fig. 007)
(Ref. Fig. 008)
(Ref. Fig. 009)

For safety purposes, the engine pylon is divided into five compartments (B to F), each housing a particular type of equipment.
Engine compartment layout and cooling air pressure have been designed so that hydraulic fluid or fuel leakage cannot come into contact with an ignition source. Pylon area in contact with the combustion chamber is protected by a torch-flame shield and pylon area in contact with turbine core is protected by a heat shield.

(1)Compartment B

Compartment B is located at the upper forward part of engine pylon between RIB J1 and RIB 10A.
It is composed of three separate compartments : compartment B1 and two compartments B2

- In center compartment B1 are located :
  - the hot air bleed duct
  - the bleed air precooler
- Compartment B2 located on R side of compartment B1 includes wiring routed to center and forward electrical junction boxes.
  This compartment is cooled by air bled from fan discharge by a ram air inlet on R side of engine pylon.
  Air is discharged overboard through a vent duct located at the R aft section of the area. Vent duct is fitted with an overheat thermoresistor calibrated at 200°C (392°F) which controls the temperature of discharged air
  In the event of pipe bursting, two pressure relief doors open when pressure is higher than 200mb.
- Compartment B2 located on L side of compartment B1 houses the throttle and thrust reverser interlock electrical controls.

(2)Compartment C

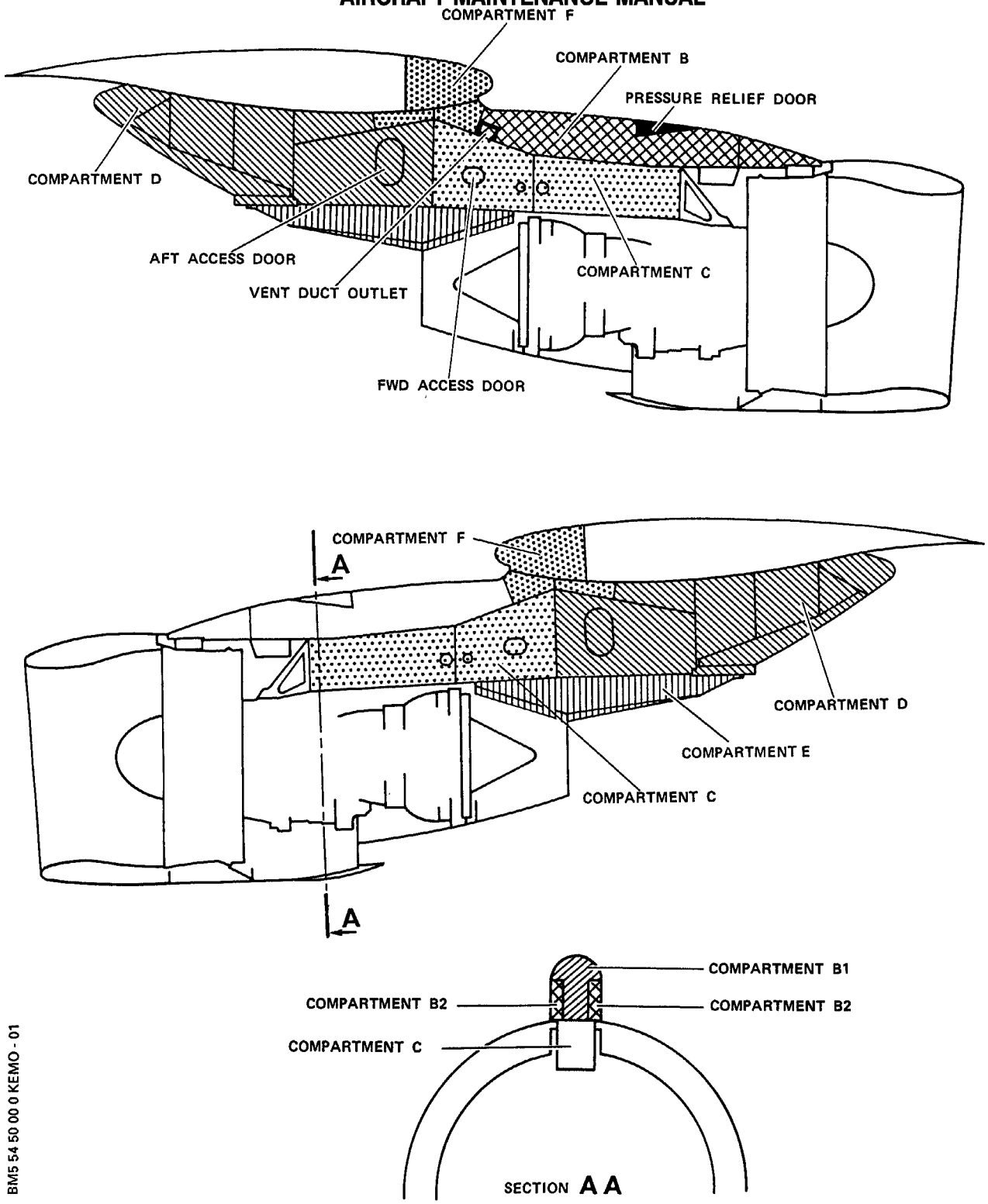
Compartment C located below compartments A and B includes :

- sections of hydraulic rigid pipes
- cold air inlet duct of the bleed air precooler
- pressure control system and air bleed system ducts
- compartment F drain lines
- compartment vent duct
- engine fire extinguishing system forward section
- pressure transmitters
- fuel system and associated drain lines.

This compartment is cooled in flight only by means of an independent ram air inlet located on R side of engine pylon.
The forward access door located on R side of engine pylon is provided with a cooling air inlet to ensure additional ventilation as soon as the engine starts running.

R Compartment C is drained via a line routed to the engine master drain.

(3)Compartment D



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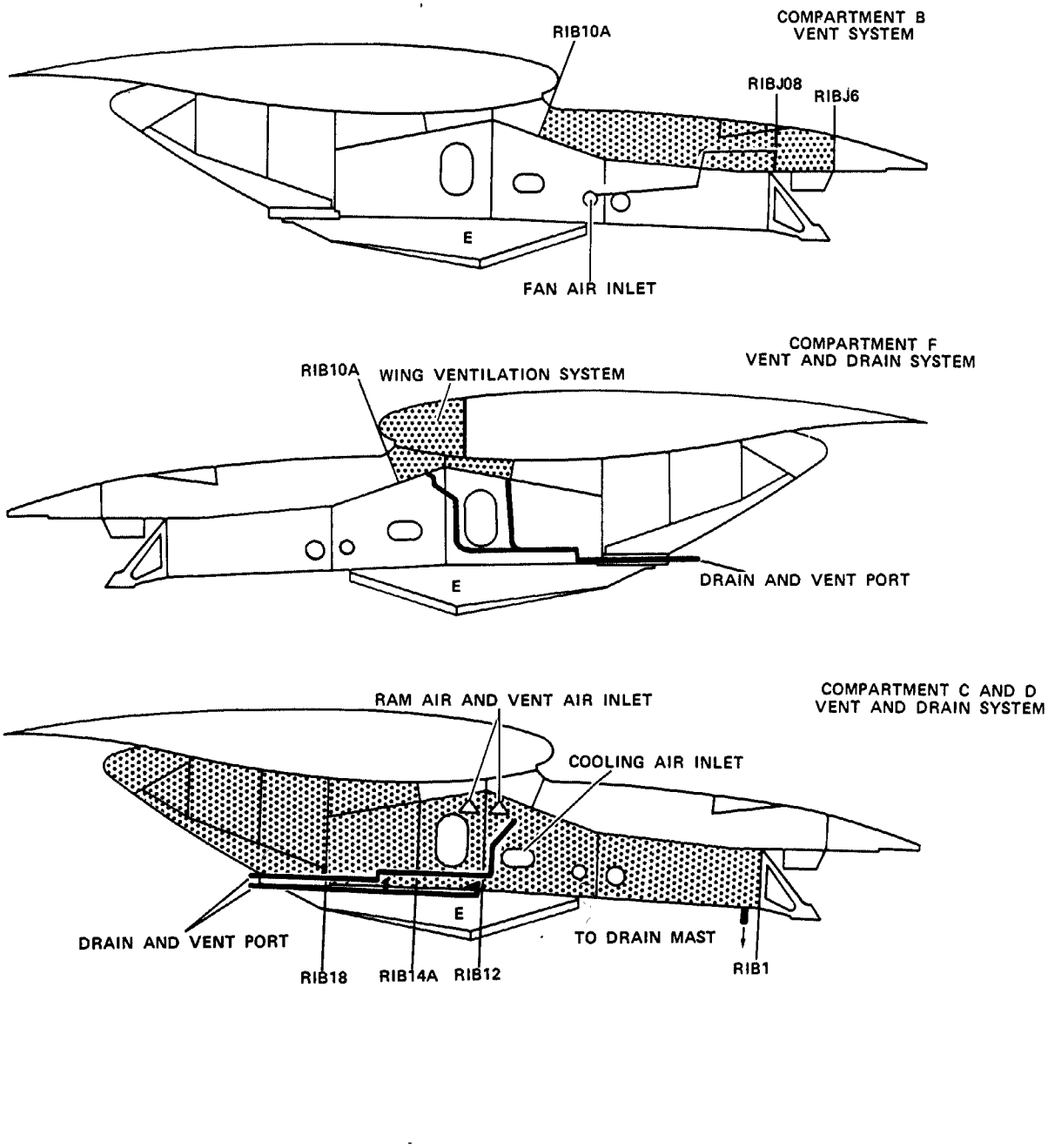
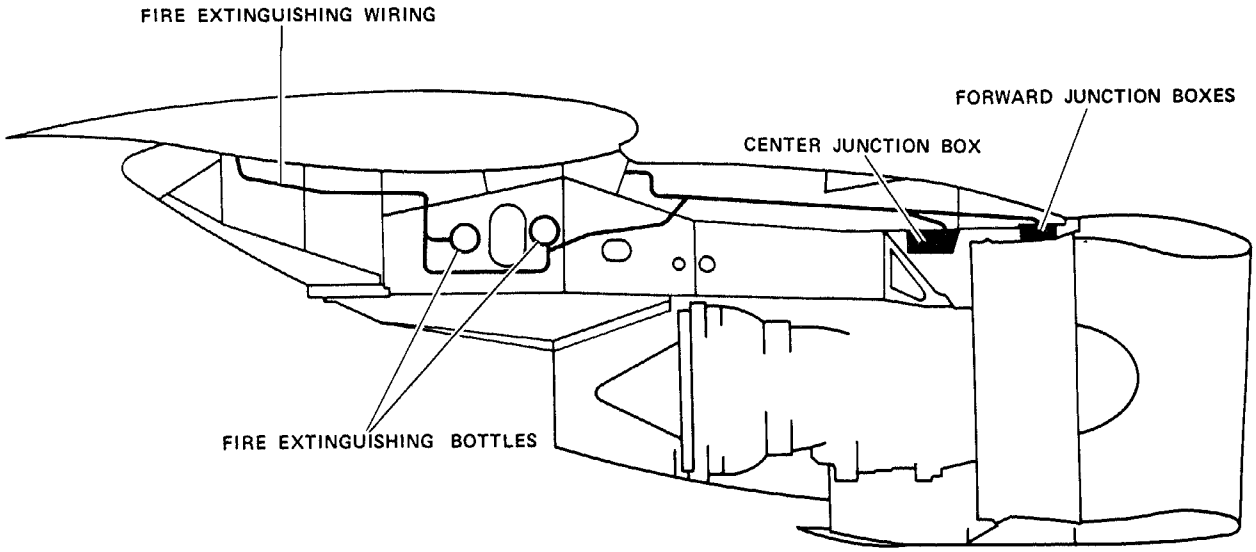
Engine Pylon - Compartment Description
Figure 004

R

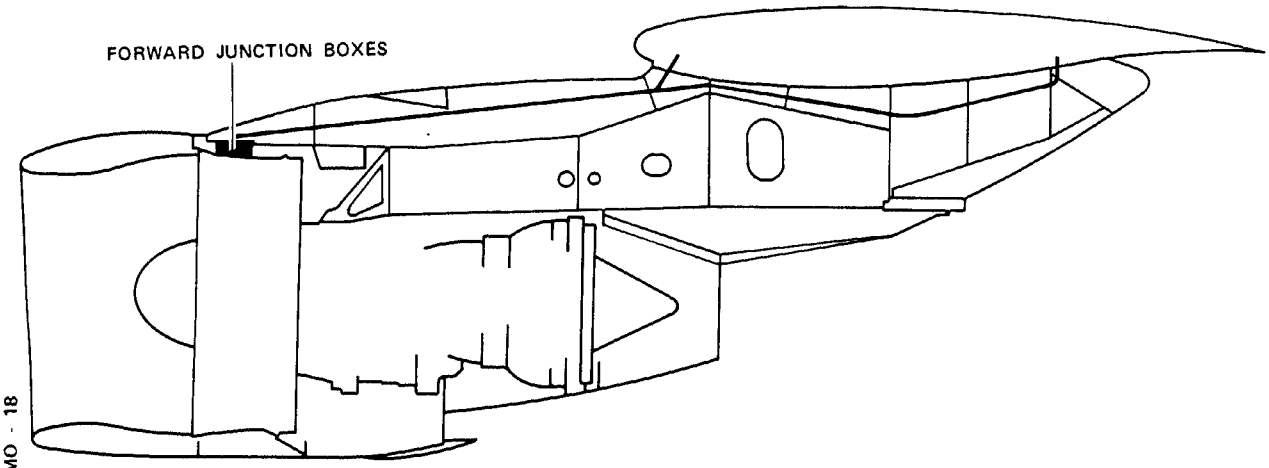


Engine Pylon - Cooling and Drainage
Figure 005

R



ENGINE PYLON ELECTRICAL INSTALLATION
(RIGHT SIDE)



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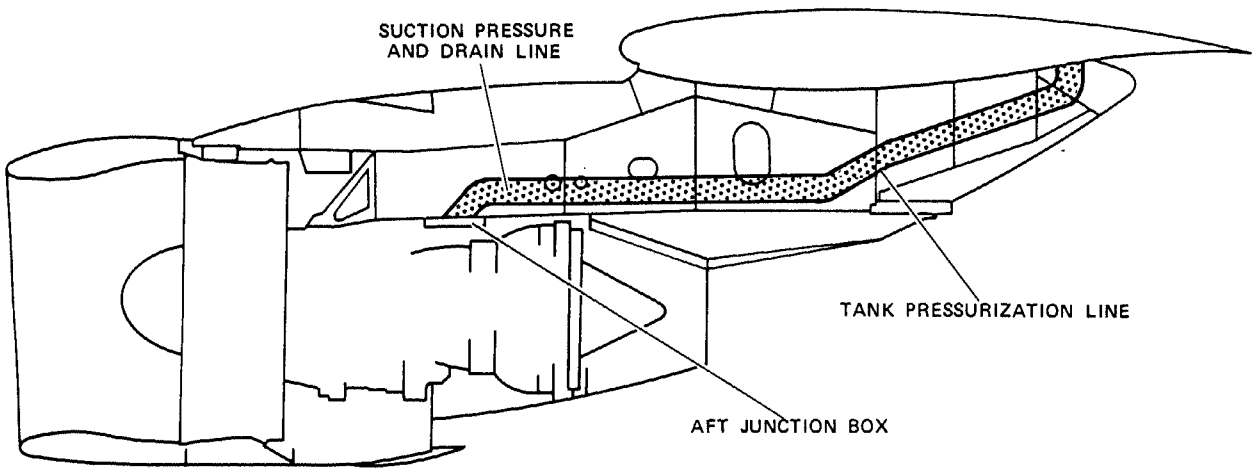
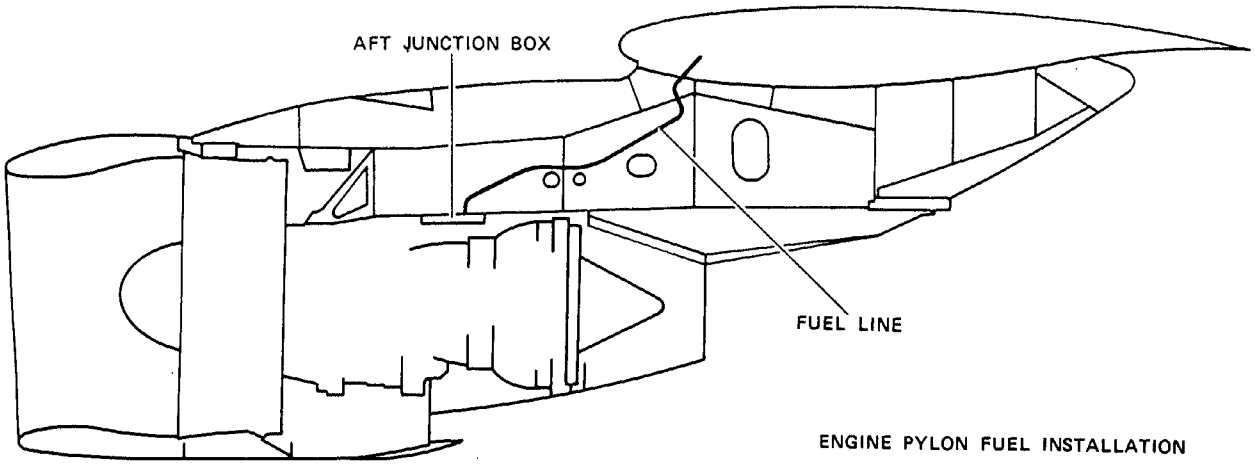
Engine Pylon - Inner Component
Figure 006



ENGINE PYLON HYDRAULIC INSTALLATION



ENGINE PYLON FUEL INSTALLATION

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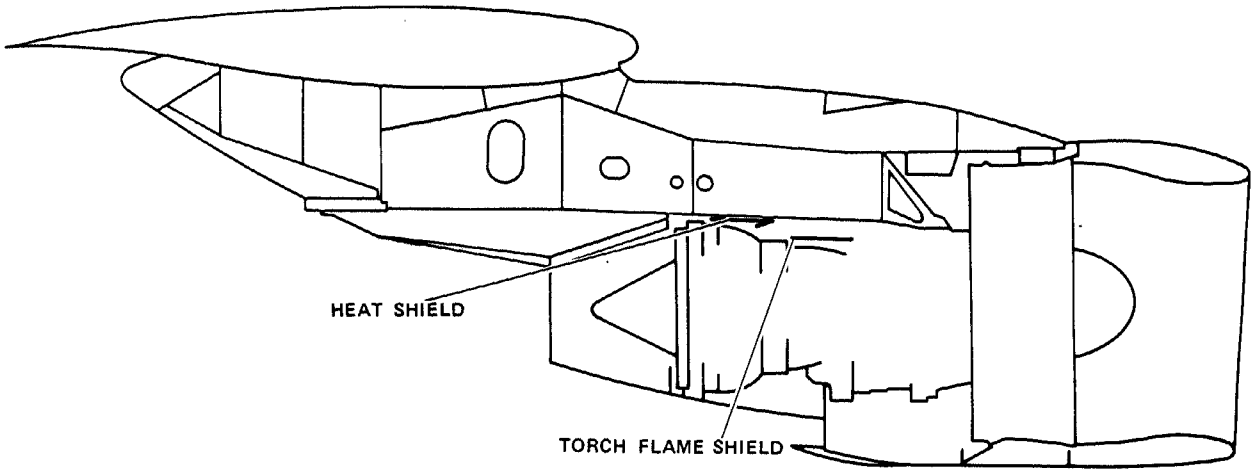
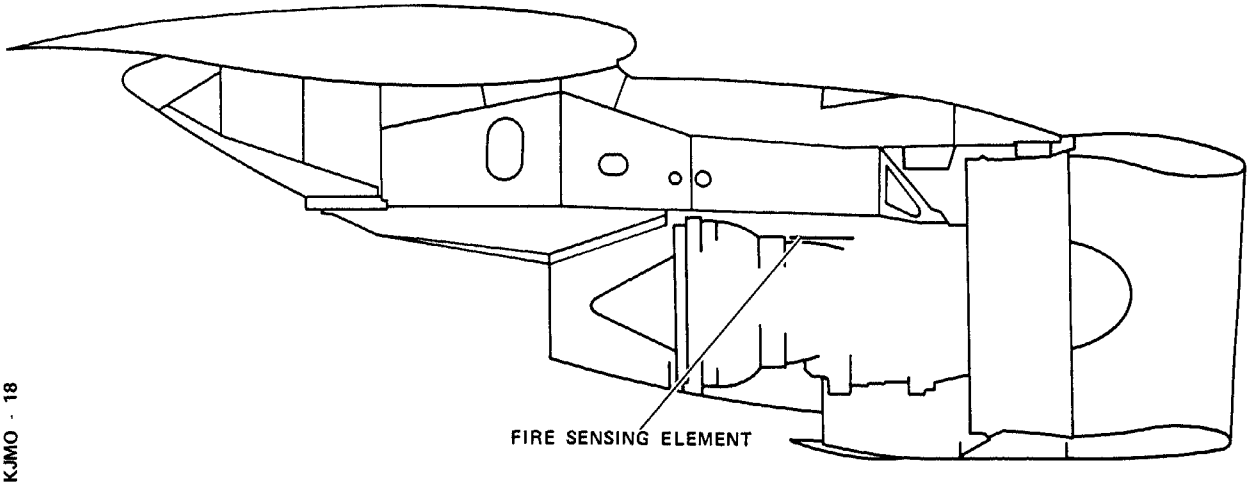
Engine Pylon - Inner Component
Figure 007





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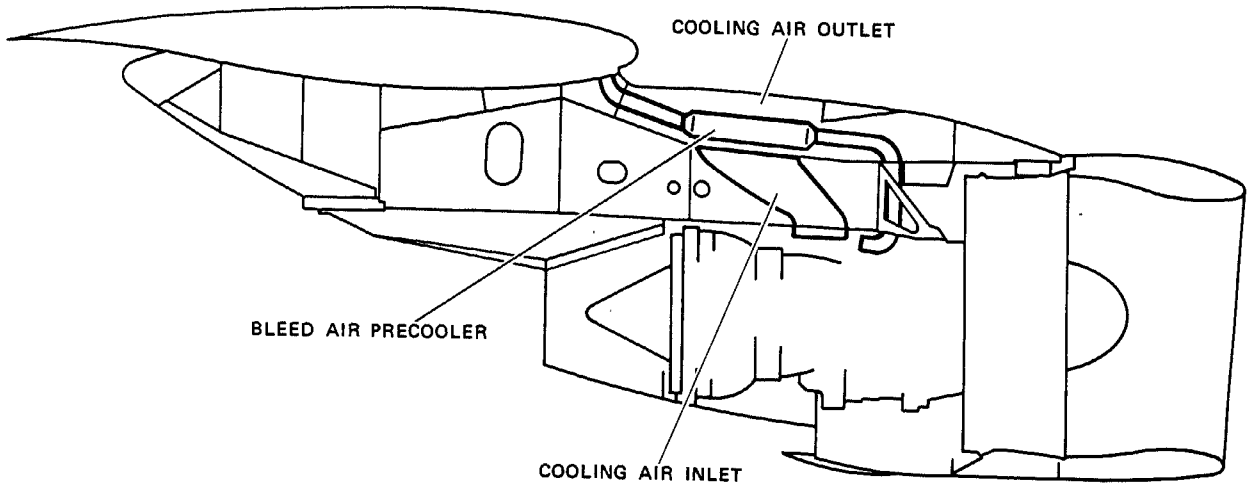
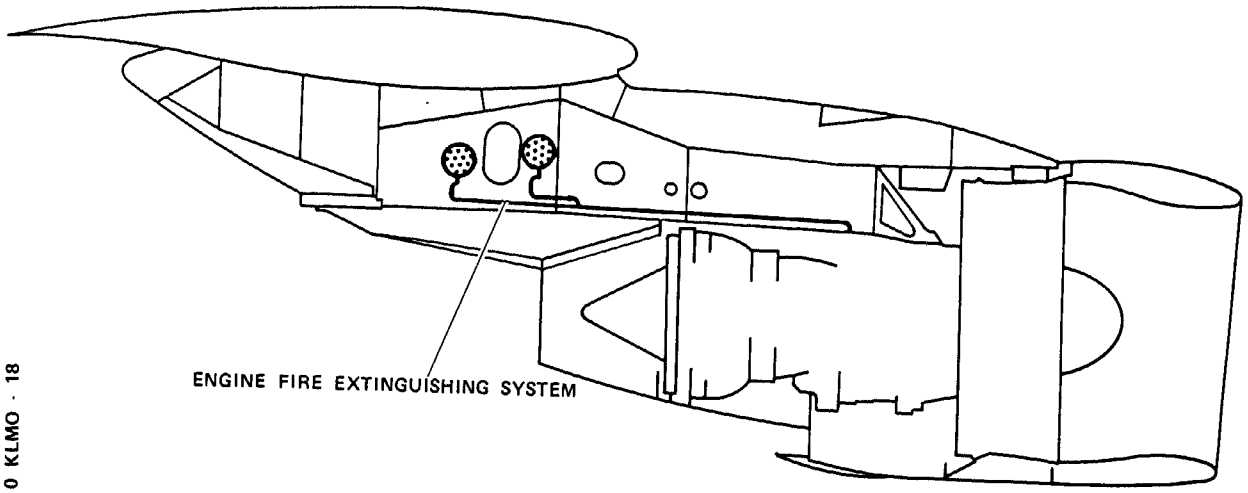
Engine Pylon - Inner Component
Figure 008



ENGINE PYLON COOLING INSTALLATION



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Engine Pylon - Inner Component
Figure 009

Compartment D located aft of compartment C includes :
- the hydraulic line sections with connections and the hydraulic hoses.
- the two engine fire extinguisher bottles and the fire extinguishing system aft section.
- compartment F and fuel system drain lines.
- electrical cables connected with the two fire extinguisher bottles.
- hydraulic tank pressurization line
- the aft section of the engine control electrical cables

Compartment D is cooled by air bled by a ram air inlet located on R side of engine pylon when the engine is running.
Compartment D is drained by means of a line leading to the trailing edge at level of lower fairing

(4) Compartment E

Compartment E located between compartment D and engine nozzle includes :
- compartment F and D and fuel system drain lines without connections
- hydraulic tank pressurization line

This compartment is not provided with cooling and drainage.

(5) Compartment F

Compartment F serves as a junction between wing slat and engine pylon. It is located above compartments C and D and aft of compartments A and B.
It includes :
- bleed air ducts
- throttle electrical controls
- shrouded fuel lines
- forward pylon-to-wing attach fitting

Compartment F is cooled by air passing through the wing slat.
Air and any residual fluid (water or fuel) are discharged overboard via the drain line leading to the engine pylon aft junction fairing.

WARNING : BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON FUEL SYSTEM, MAKE CERTAIN THAT FIRE EXTINGUISHING EQUIPMENT IS AVAILABLE IN PROXIMITY TO WORKING AREA.

MAKE CERTAIN THAT LANDING GEAR GROUND SAFETIES INCLUDING WHEEL CHOCKS ARE IN POSITION.

BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON ENGINE PYLON, IN FLIGHT COMPARTMENT, ON CENTER PEDESTAL, DISPLAY WARNING NOTICES TO PROHIBIT MANEUVERS OF FLAP AND SLAT CONTROL LEVER.

CAUTION : TO PREVENT DAMAGE, CONTAMINATION AND INGESTION OF FOREIGN MATTER, PIPES, PNEUMATIC DUCTS AND ELECTRICAL CONNECTORS SHALL BE CAPPED.

NOTE : Removal/Installation procedure is identical for both engine pylons.

1. Equipment and Materials

ITEM	DESIGNATION
1. 98A54003002000	Trolley-Pylon Removal/Installation
2.	Chain Hoist, 4 tons (9000 lbf.)
3. 98A54003003000	Storage Frame
4. 98A54003100000	Gear - Hoisting, Pylon
5.	Torque Wrench 4 m.daN (29 lbf. ft.)
6. 65303A4351M000	Wrench-Pin
7. 98A26213501000	Wrench-Special
or 98A26213502000	Wrench-Special
8. 98A29113501000	Wrench-Special
or 98A29113502000	Wrench-Special
or 98A29113503000	Wrench-Special
9. 65375AB351M000	Wrench-Pin
10.	Cotter Pins
11.98A27901005000	Pin - Rigging, Throttle Control
12.98A76101003000	Rigging Pin - Autothrottle Coupling Unit
13.98A54003022000	Extractor
14.98A54003084000	Tool-Sleeve Inserting
15.99A76101501000	Pin - Rigging
16.99A76101500000	Rigging Pin - Primary Transmission Crank Lever Interlock
17.Material No. 04-004	Common Greases (Ref. 20-31-00)
18.Material No. 04-007	Common Greases (Ref. 20-31-00)
19.Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
20.	Access Platforms 4 m (13 ft. 1 in.)
21.	Containers
22.	Blanking Caps (Electrical Connectors)
23.	Blanking Caps (Hydraulic Couplings)
24.	Circuit Breaker Safety Clips
25.	Lock Washers - Special
26.	Turnbuckles Safety Clips

Referenced Procedures

ITEM	DESIGNATION
- 06-41-54, P. Block 1	Nacelles and Pylons
- 12-12-29, P. Block 1	Hydraulics
- 20-23-11, P. Block 1	Installation and Repair of Tubing
- 20-23-12, P. Block 1	Specified Torque Values for Unions
- 20-28-11, P. Block 1	Electrical Bonding
- 24-41-00, P. Block 301	AC External Power Control
- 26-21-00, P. Block 501	Engine Fire Extinguishing
- 26-21-15, P. Block 401	Fire Extinguisher Bottle
- 27-80-00, P. Block 301	Lift Augmentation (Slats and Krueger Flaps)
- 28-21-00, P. Block 501	Fuel Pump System
- 29-14-00, P. Block 301	Hydraulic Reservoir Pressurizing System
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-00, P. Block 601	Engine Bleed Air Supply System
- 54-50-00, P. Block 601	Fillets/Fairings
- 54-51-72, P. Block 801	Forward Attach Fitting (RIB12)
R - 54-51-85, P. Block 401	Aft Attach Fitting
- 54-54-00, P. Block 401	Aft Fairing
- 54-55-00, P. Block 401	Lower Fairing
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Cowl Doors
- 71-13-02, P. Block 401	Fan Cowls
- 71-13-03, P. Block 401	Fan Thrust Reverser Cowls
- 76-11-00, P. Block 1	Throttle Controls
- 76-11-00, P. Block 401	Throttle Controls
- 76-11-00, P. Block 501	Throttle Controls
- 76-11-31, P. Block 401	Secondary Transmission

2. Procedure

NOTE : Hang-up the four-arm handling sling from tool 98A54003002000 to a four ton chain hoist so as to facilitate engine pylon removal/installation. The assembly shall be maneuvered by means of a crane or a traveling crane (Ref. Fig. 401).

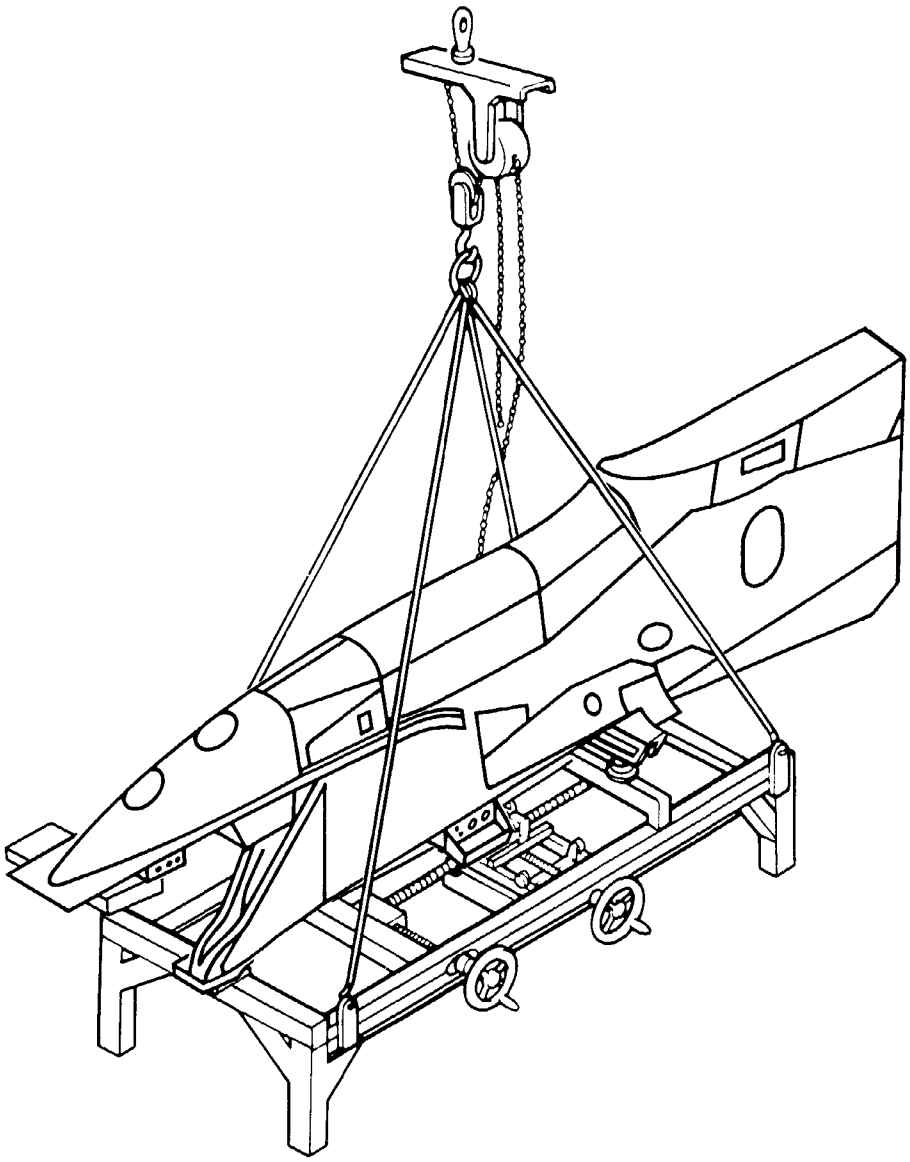
NOTE : The equipped pylon weighs 1085 kg (2395 lb) approx. and the unequipped pylon 825 kg (1821 lb) approx.

A. Job Set-Up

(1)Remove engine cowl doors (Ref. 71-13-02, 71-13-03, P. Block 401).
(2)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(3)Make certain that electronics racks ventilation is correct.
(4)Place flap and slat control lever in second notch to extend slats.
(Ref. 27-80-00, P. Block 301).
- Place a warning notice prohibiting operation of flap and slat control lever.

NOTE : Slats must be extended to gain access to panel 512AT (612AT).

(5)Position access platforms at cargo compartment door.



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Pylon Removal/Installation Trolley
Figure 401

(6)In forward cargo compartment,
- Remove panel 131SW (132SW) giving access to autothrottle coupling unit and to turnbuckles (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).

(7)Install the following rigging pins on throttle control cable routing: (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).
- 98A27901005000 in cable tension regulator between FR11 and FR12
- 98A76101003000 in autothrottle coupling unit.

(8)Position access platform at engine pylon and remove panel
- RH engine pylon : 423EL
- LH engine pylon : 413EL

(9)On primary transmission, install rigging pins 99A76101501000 and 99A76101500000 (Ref.76-11-00, P. Block 1, 76-11-00, P. Block 401, 76-11-00, P. Block 501) and remove access platform from engine pylon.

(10)Remove engine (Ref. 71-00-00, P. Block 401).
WARNING : ENGINE REMOVAL IS MANDATORY BEFORE PYLON REMOVAL

(11)On engine pylon (Ref. 06-41-54, P. Block 1)
(a)Open access doors
474AR (484AR) - 473AL (483AL) - 411BL (421BL)
416AR (426AR) - 415AL (425AL) - 411CL (421CL)
(b)Open pressure relief doors 471BL (482BR) - 413AL (423AL) - 414AR (424AR)
(c)Remove the following skin panels from:
Left engine pylon 413BL, 413DL, 471AL, 472AR, 472BR, 473BL, 474BR, 473CL, 474CR, 414ER, 413EL, 413CL, 414CR, 474DR, 411AZ, 412AZ.
Right engine pylon
423BL, 421CL, 423CL, 424CR, 481AL, 482AR, 483BL, 484BR, 483CL, 484CR, 424ER, 423EL, 483DL, 423DL, 421AZ, 422AZ.

(12)Remove skin panel 512AT (612AT)

(13)Remove lower fairing (Ref. 54-55-00, P. Block 401).

(14)Remove fire extinguisher bottles and associated hoses (Ref. 26-21-15, P. Block 401).

B. Removal

R (Ref. Fig. 402)
R (Ref. Fig. 403)
(Ref. Fig. 404)
R (Ref. Fig. 405)

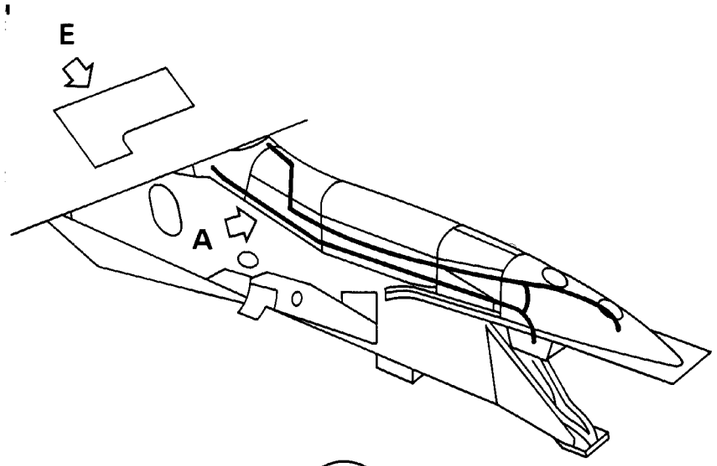
(1)Remove all electrical connectors (2) at wing-to-pylon interface and install blanking caps.

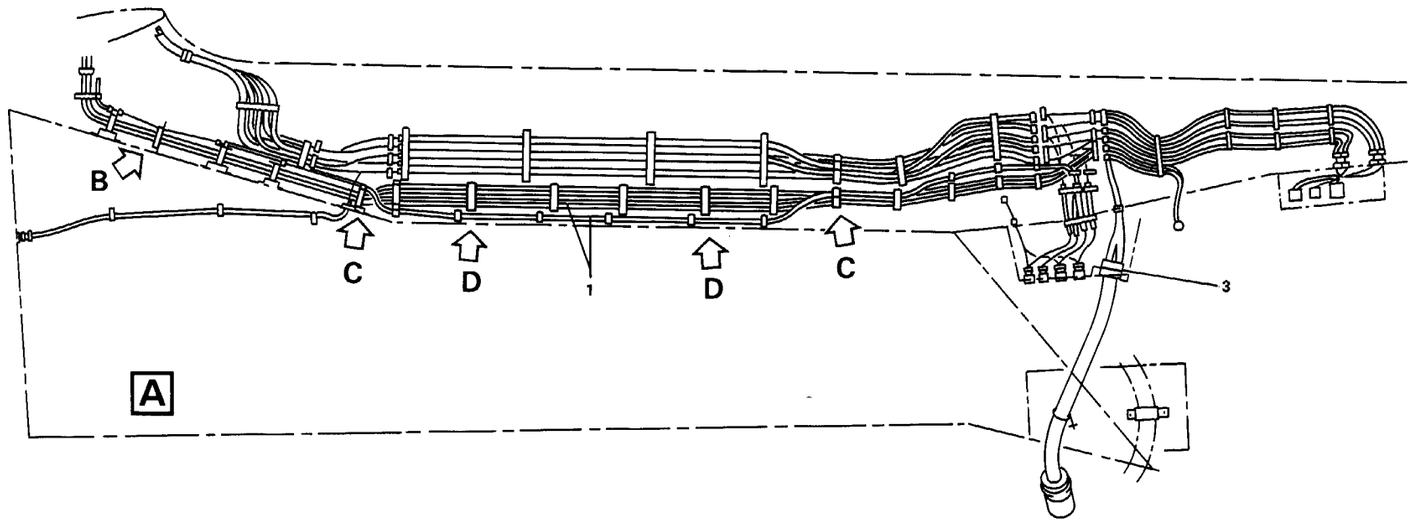
R (2)Remove clamps and disconnect electrical connectors (52).

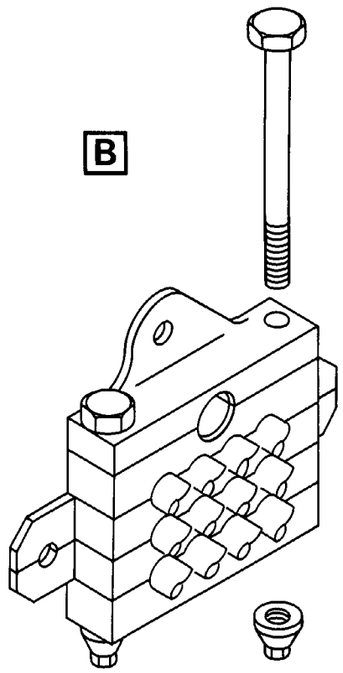
(3)Remove electrical cable bundle (1):
(a)Open all the electrical clamp blocks attaching the bundle between wing and RIBJ6.
(b)Open electrical junction box (3), mark the wires of bundle (1).
(c)Disconnect wires of bundle (1) from junction box (3).
(d)Pull cables and coil and attach them to wing during removal/installation of engine pylon.

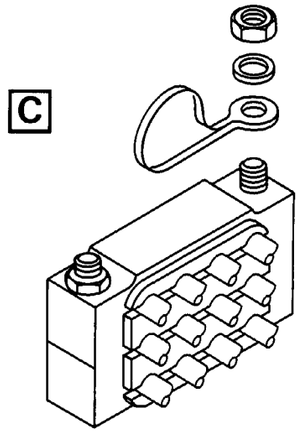
(4)Remove bleed air duct (Ref. 36-11-00, P. Block 401).

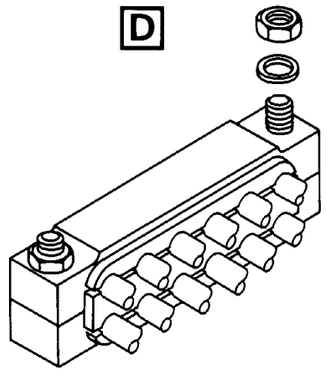
(5)Remove throttle control cable as follows:
(a)Remove and discard turnbuckle pins and loosen cables by means of

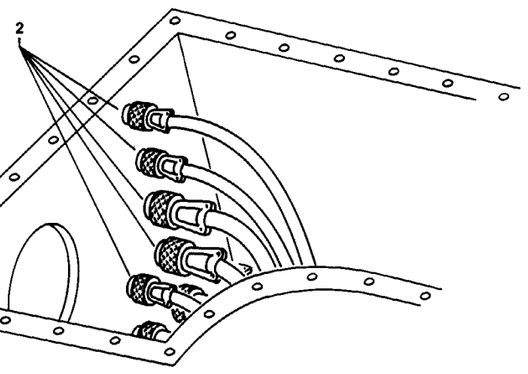












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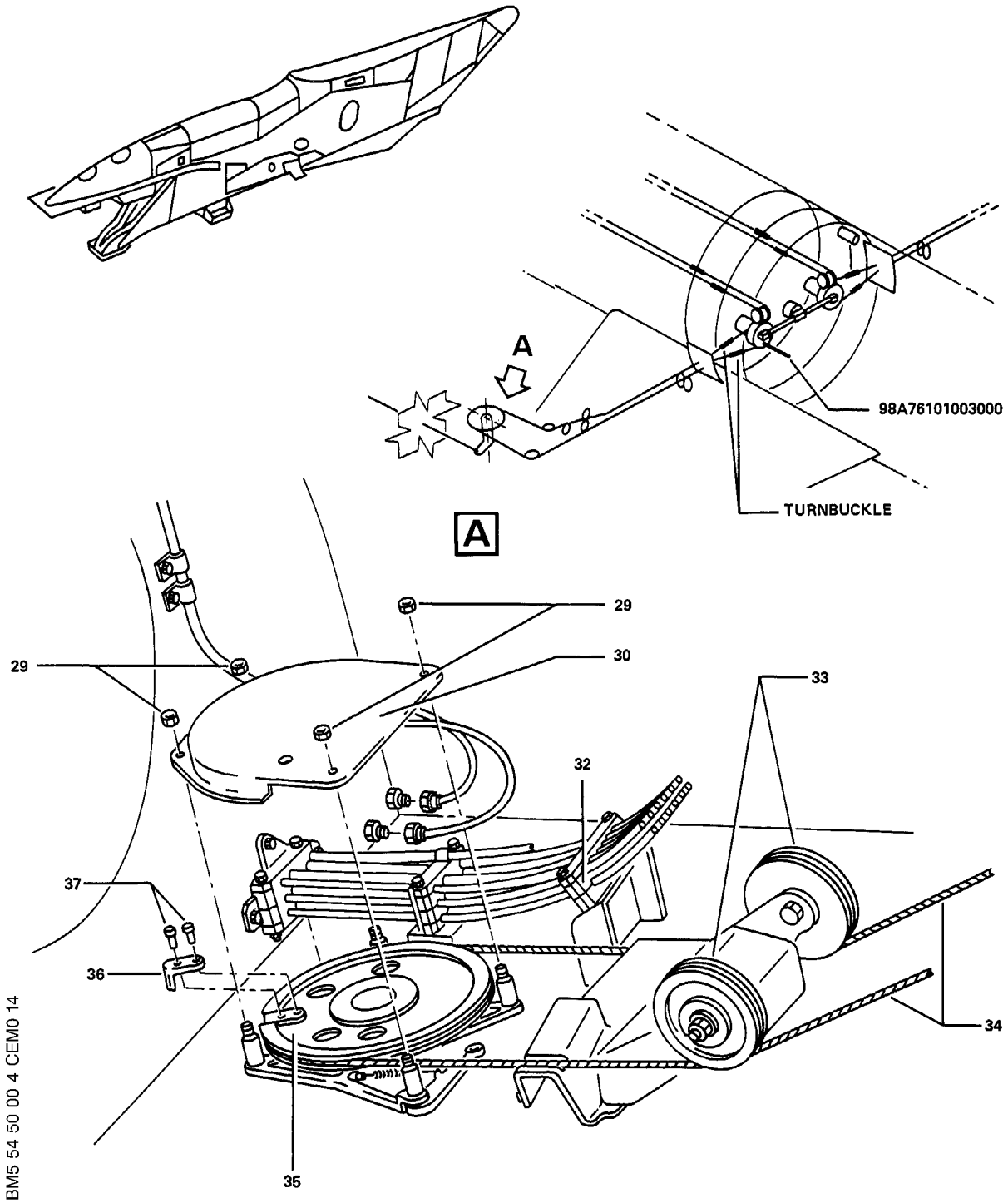
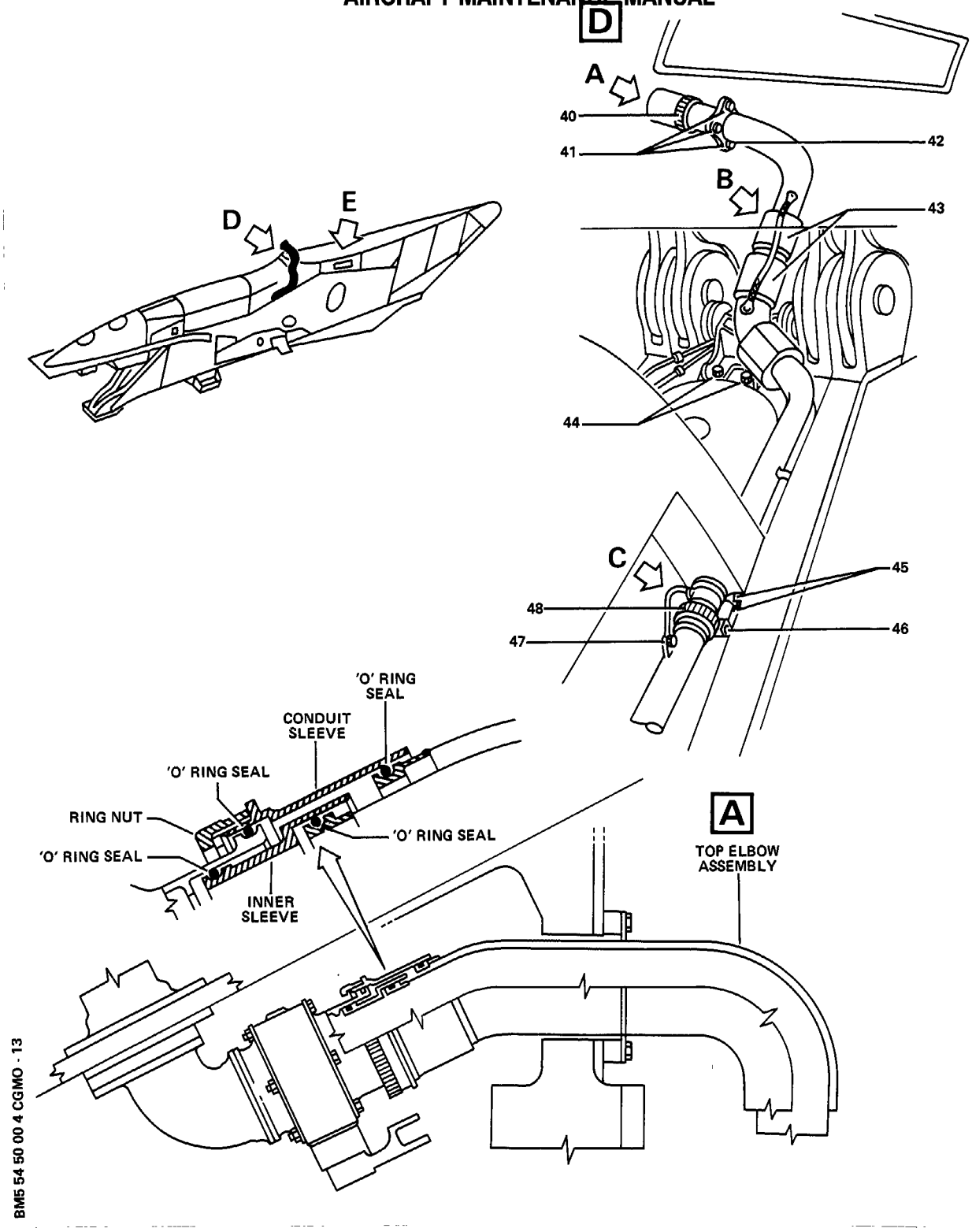
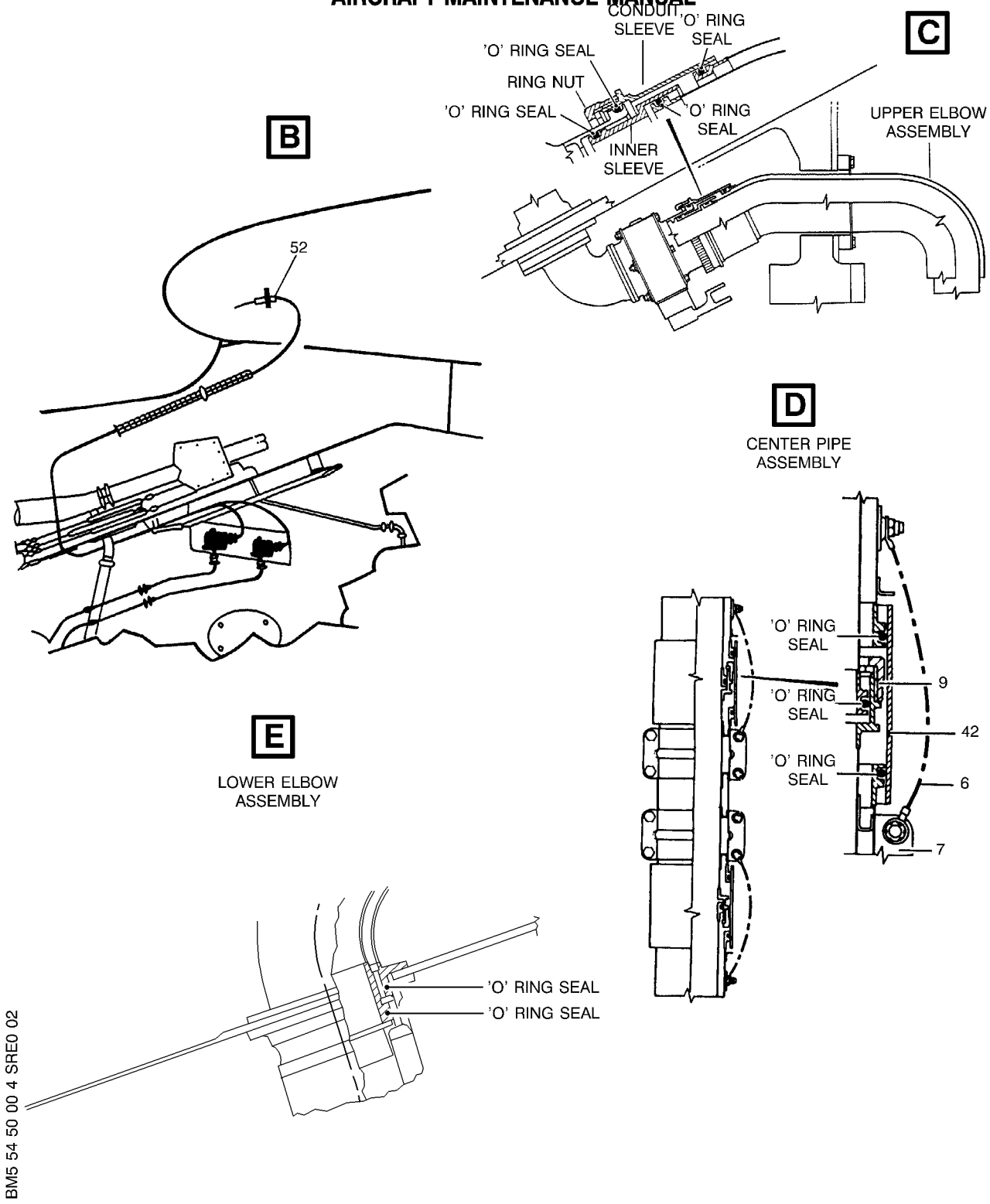
Removal of Electrical Wiring
Figure 402



Removal of Throttle Control Cable
Figure 403



Removal of Fuel Line
Figure 404



Removal of Fuel Line and Air Pressure Sensor Lines
Figure 405

turnbuckles located in zone 145 (146).
(b)Remove four nuts (29).
(c)Remove flange (30).
(d)Remove two bolts (37) and cable guide stop (36).
(e)Disengage cable (34) from pulley (35).
(f)Remove cable guides from pulley (33) brackets and disengage the cable from the pulleys.

(6)Remove fuel line as follows:
(a)Loosen coupling nut (40).
(b)Remove nuts (41) and remove flange (42).
(c)Disconnect coupling halves (43):
1 Disconnect bonding lead (6).
2 Disconnect the two half-shells (7).
3 Slide off sleeve (43) until nut (9) is free.
4 Loosen coupling nut (9).
(d)Remove screws (45) and pull forwards end-fitting (46) of fuel drain line.
(e)Disconnect bonding lead (47).
(f)Remove bolts (44).
(g)Loosen coupling nut (48) and disengage fuel line.

(7)Disassemble and remove aft pylon structure from wing lower surface (Ref. 54-54-00, P. Block 401).

(8)Manually retract the slats (Ref. 27-80-00, P. Block 301).

(9)Make certain that trolley-pylon R/I 98A5400300200 is balanced (counterweight placed in empty trolley position). Balance trolley if required.

(10)Slightly lift trolley from ground and ensure perfect balance.

(11)Raise trolley by means of a travelling crane or crane and complete positioning manually using a chain hoist.

(12)Attach trolley to pylon through engine mounts (Ref. 54-51-85, P. Block 401).

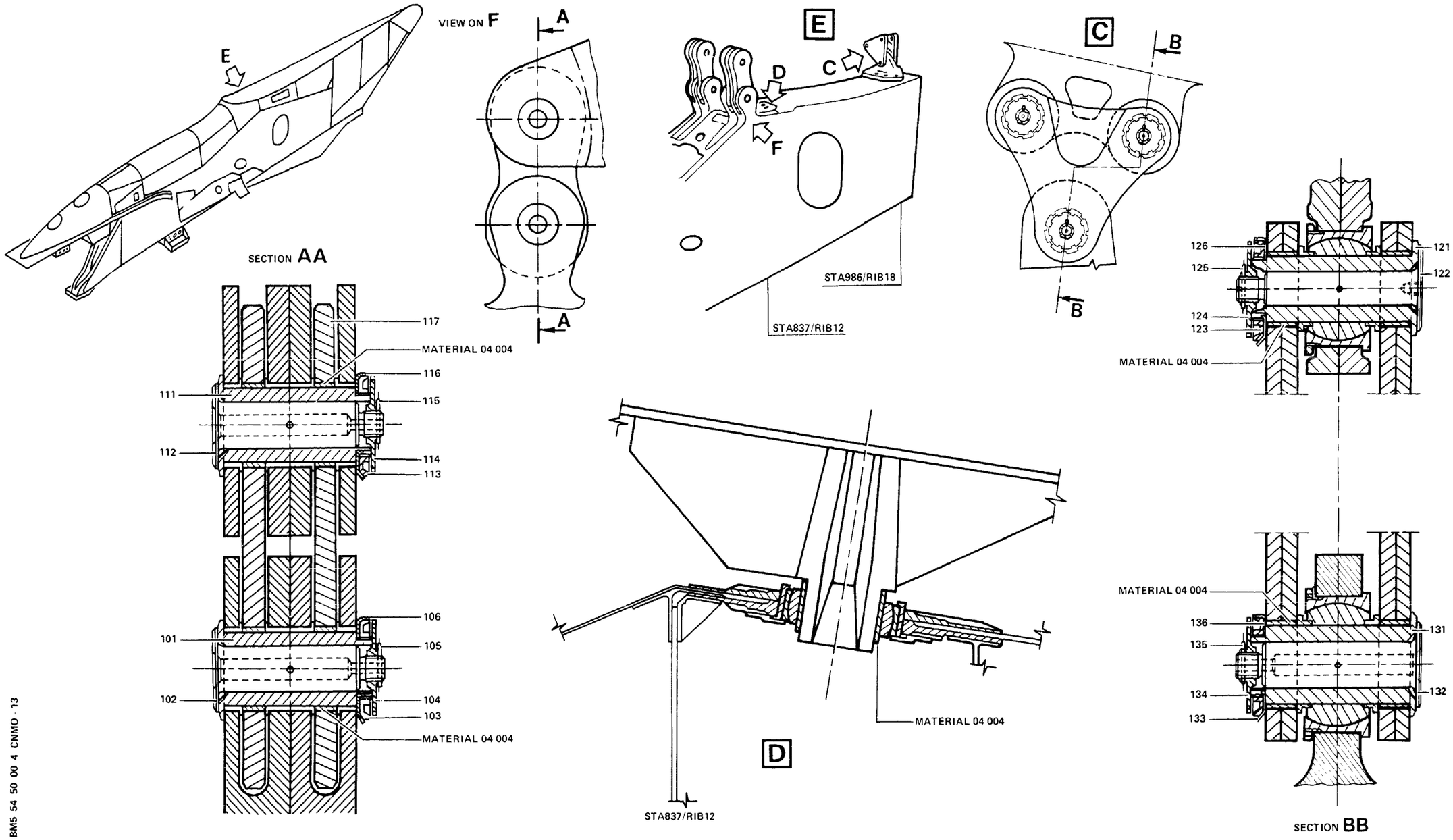
(13)Disconnect grounding leads at wing-to-pylon junction (Ref. 20-28-11, P. Block 1).

(14)Balance trolley by placing counterweight in loaded position.
NOTE : Make certain that counterweight lateral position is in RH or LH engine pylon configuration according to the pylon to be removed. These positions are those noted on trolley at engine pylon first removal/installation.

(15)Take up slack in handling slings.

(16)On each FWD engine pylon attach fitting (Ref. Fig. 406)
(a)Discard cotter pin (105) and remove nut (104). Using tools 65303A4351M000 and 65375AB351M000.
(b)Remove bolt (102).
(c)Infold lockwasher tab, remove nut (103) and discard lock washer (106) using a thin spanner and tool 65375AB351M000.
(d)Remove bush (101) using extractor 98A54003022000 (sub-assembly 98A54003022004).

(17)On aft pylon attach fitting:



Wing-to-Pylon Attach Fitting
Figure 406

(a)Remove the three fail-safe fasteners using the same procedure for each one.
1 Remove and discard cotter pin (135) or (125).
2 Remove nut (134) or (124) using tools 65303A4351M000 and 65375AB351M000.
3 Remove bolt (132) or (122).
4 Unfold lockwasher tab, remove nut (133) or (123) and discard lockwasher (136) or (126).
5 Remove bush (131) or (121) using extractor 98A54003022000.
NOTE : Use extractor 98A54003022003 for lower sleeve and extractor 98A54003022002 for the two lower sleeves.
CAUTION : BALANCE PYLON USING COUNTER-WEIGHT ON ENGINE PYLON FRAME. IF NECESSARY CORRECT CENTERING BY MOVING COUNTER-WEIGHT.

(18)Start lowering pylon using chain hoist. Make certain that during this operation FWD attach fitting shackles and spigot ball joint are not subjected to adverse loads that may result in damage.

(19)Lower pylon by means of the crane or travelling crane and position it on the ground using chain hoist.

(20)Remove handling slings from trolley 98A54003002000.

(21)After pylon removal, check the correct alignment of RIB12 fitting bushes bores by manually inserting the sleeves into their housings.
If there are difficulties of insertion, repair bushes have to be installed (Ref. 54-51-72, P. Block 801).

C. Preparation of Replacement Component

(1)In the case of engine pylon replacement, carry out the following steps:

(a)On removed engine pylon:
NOTE : Tools 98A54003004001, 98A54003017000, 98A54003101000 and 98A54003007000 are sub-assemblies of tool 98A54003100000.
1 Attach cross beam 98A54003101000 to engine hoist fitting at RIB7.
2 Install hoisting beam 98A54003007000 on FWD pylon-to-wing attach fitting.
3 Adjust attach ring of tool 98A54003100000. Balance by means of side counterweights.
4 Hook hoist beam 98A54003004001 onto chain hoist and raise it up to FWD pylon-to-wing attach fitting level.
5 Attach slings 98A54003017000 of hoist beam to the beams already secured to the pylon.
6 Take-up slack in slings.
7 Disassemble pylon from frame 98A54003002000 and position it above storage frame 98A54003003000.
8 Install engine pylon onto storage frame 98A54003003000 and secure.
9 Remove tool 98A54003100000.

(b)On replacement pylon:
1 Depreserve replacement pylon
2 Attach hoist beam 98A54003100000 and cross beam 98A54003101000 as indicated in para. 2.C.1 (a)
3 Remove engine pylon from transportation container with chain hoist.
4 Position pylon over trolley 98A54003002000 using either a crane or traveling crane.
5 Complete manually pylon positioning over trolley 98A54003002000 using

chain hoist.
6 Secure engine pylon on trolley 98A54003002000 by means of engine attach fittings.
7 Remove tool 98A54003100000.
8 Make certain that replacement pylon especially at engine-to-pylon and pylon-to-wing junctions is in correct condition.
9 Transfer parts retained from removed pylon to new pylon after cleaning and check for correct condition.
WARNING : AS SOME PYLON COMPONENTS ARE IN TITANIUM, CLEANING WITH TRICHLORETHYLENE MAY RESULT IN SERIOUS DAMAGE TO PYLON.

(2)In the case of repair or check for which pylon replacement is not necessary, carry out visual checks.
(3)Remove fail-safe fasteners on wing side (Ref. para. 2.B.(18)) and remove shackles.
(4)Clean using Material No.11-003:
- Spigot fitting
- forward and aft shackles
- yokes attached to wing and pylon
- bolts (102) and (112)
- ball joint attach fitting on engine pylon
- sleeves (101) and (111)

(5)Check shackles of forward and aft attach fittings for condition and replace if necessary.
(6)Check dimensions of forward and aft fail safe fasteners.
Change bolts and/or sleeves if necessary.
(7)On wing, check yokes of forward and aft attach fittings secured to wing and spigot fitting for correct condition.
(8)On engine pylon, check pylon-to-wing attach fittings
(a)Check of yokes attached to RIB12
(9)On wing
Coat spigot fitting and bores of shackles attached to wing lower surface with Material No. 04-004.

**ON A/C 001-005,

(10)Install shackles and fail-safe bolts as follows:
(a)Install shackles (117) in yokes attached to wing.
(b)Coat sleeves (111) plain length with Material No. 04-004 and threaded section with Material No. 04-007.
(c)Install sleeve in bore by placing threaded section on throttle control pulley side, using tool 98A54003084000 (sub-assembly of 98A54003084004).
(d)Install a new lock washer (116).
(e)Screw nut (113) until it abuts sleeve (111) without tightening.
(f)While holding sleeve (111) fixed, TORQUE nut to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft) using tool 65375AB351M000 equipped with a torque wrench. Safety nut (113) by folding lock washer (116) tab.
(g)Coat bolt (112) thread with Material No. 04-007 and insert it into sleeve (111) with the threaded section toward throttle control pulley side.
(h)Hold bolt (112) fixed using pin wrench 65303A4351M000 and tighten

nut (114).
(i)TORQUE nut (114) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench and install cotter pin (115).
(j)By means of th e shim make certain that the play between the washer (106) and the side of the yoke is at least 0.1 mm (0.0039 in.).
(11)On replacement pylon :
Coat the ball joint receiving the spigot fitting, forward and aft attach fittings with Material No. 04-004.
(12)Protect engine pylon with rubber mats to avoid damage
(13)Make certain that trolley 98A54003002000 is properly balanced (counter-weight in loaded position).

**ON A/C 006-100,

(10)Install shackles and fail-safe bolts as follows:
(a)Install shackles (117) in yokes attached to wing.
(b)Coat sleeves (111) plain length with Material No. 04-004.
(c)Install sleeve in bore by placing threaded section on throttle control pulley side, using tool 98A54003084000 (sub-assembly of 98A54003084004).
(d)Install a new lock washer (116).
(e)Screw nut (113) until it abuts sleeve (111) without tightening.
(f)While holding sleeve (111) fixed, TORQUE nut to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft) using tool 65375AB351M000 equipped with a torque wrench. Safety nut (113) by folding lock washer (116) tab.
(g)Coat bolt (112) thread with Material No. 04-007 and insert it into sleeve (111) with the threaded section toward throttle control pulley side.
(h)Hold bolt (112) fixed using pin wrench 65303A4351M000 and tighten nut (114).
(i)TORQUE nut (114) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench and install cotter pin (115).
(j)By means of the shim make certain that the play between the washer (106) and the side of the yoke is at least 0.1 mm (0.0039 in.).
(11)On replacement pylon:
Coat the ball joint receiving the spigot fitting, forward and aft attach fittings with Material No. 04-004.
(12)Protect engine pylon with rubber mats to avoid damage
(13)Make certain that trolley 98A54003002000 is properly balanced (counter-weight in loaded position).

**ON A/C 001-005,

D. Installation
(1)Secure handling sling of trolley to chain hoist and take up slack.
(2)Slightly lift trolley and check the assembly for correct balance.
(3)Lift engine pylon to required height and position it at wing lower surface attach fittings.

(4)Complete pylon positioning manually using chain hoist and check that spigot engages correctly in ball joint and shackles in yokes.
(5)On FWD attach fittings
(a)Install FWD attach fitting fail safe fasteners, starting from inboard attach fitting.
CAUTION : TAKE CARE NOT TO DAMAGE THROTTLE CONTROL PULLEYS LOCATED BETWEEN BOTH ATTACH FITTINGS.
1 Coat the grip length of sleeve (101) with Material No. 04-004 and the threaded section with Material No. 04-007.
2 Install sleeve using tool 98A54003084000. The threaded section of the sleeve must be placed on throttle control pulley side.
3 Install a new lock washer (106).
4 Tighten nut (103) up to stop on sleeve (101).
5 Hold sleeve (101) by means of a wrench and TORQUE nut to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench.
Safety nut (103) by bending the tab of lock washer (106).
6 Coat the threaded portion of bolt (102) with Material No. 04-007 and insert bolt in sleeve (101) so that the threaded section is on throttle control pulley side.
7 Hold bolt (102) by means of wrench 65303A4351M000 and tighten nut (104). TORQUE nut (104) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench.
Install cotter pin (105).
8 By means of a shim make certain that the play between the washer (106) and the side of the yoke is at least 0.1 mm (0.0039 in.).

**ON A/C 006-100,

D. Installation
(1)Secure handling sling of trolley to chain hoist and take up slack.
(2)Slightly lift trolley and check the assembly for correct balance.
(3)Lift engine pylon to required height and position it at wing lower surface attach fittings.
(4)Complete pylon positioning manually using chain hoist and check that spigot engages correctly in ball joint and shackles in yokes.
(5)On FWD attach fittings
(a)Install FWD attach fitting fail safe fasteners, starting from inboard attach fitting.
CAUTION : TAKE CARE NOT TO DAMAGE THROTTLE CONTROL PULLEYS LOCATED BETWEEN BOTH ATTACH FITTINGS.
1 Coat the grip length of sleeve (101) with Material No. 04-004.
2 Install sleeve using tool 98A54003084000. The threaded section of the sleeve must be placed on throttle control pulley side.
3 Install a new lock washer (106).
4 Tighten nut (103) up to stop on sleeve (101).
5 Hold sleeve (101) by means of a wrench and TORQUE nut to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench.
Safety nut (103) by bending the tab of lock washer (106).

6 Coat the threaded portion of bolt (102) with Material No. 04-007 and insert bolt in sleeve (101) so that the threaded section is on throttle control pulley side.
7 Hold bolt (102) by means of wrench 65303A4351M000 and tighten nut (104). TORQUE nut (104) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Install cotter pin (105).
8 By means of a shim make certain that the play between the washer (106) and the side of the yoke is at least 0.1 mm (0.0039 in.).

**ON A/C 001-005,

(6)On aft attach fitting
(a)Position both shackles and hold them in placed with two screw clamps
(b)Installation procedure for both upper fail-safe fasteners is identical:
1 Coat the grip length of sleeves (121) with Material No. 04-004 and the threaded section with Material No. 04-007.
2 Install sleeve (121) using tool 98A54003084000. The threaded portion must be directed towards the rear of the pylon.
NOTE : Use tool 98A54003084002 for the two upper sleeves and tool 98A54003084003 for the lower sleeve.
3 Install new lock washer (126).
4 Tighten nut (123) up to stop on sleeve (121).
5 Hold sleeve (121) and TORQUE nut (123) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Safety nut (123) by bending the tab of lock washer (126).
6 Coat the threaded section of bolt (122) with Material No. 04-007 and insert the screw in sleeve (121). The threaded portion must be directed towards the rear of the pylon.
7 Hold bolt (122) by means of wrench 65303A4351M000 and tighten nut (124) using tool 65375AB351M000 equipped with a torque wrench.
8 TORQUE nut (124) to between 4 and 5 m.daN (29.5 and 36.8 lbf.) using tool 65375AB351M000 equipped with a torque wrench. Install cotter pin.
(c)Install the lower fail safe fastener as described in paragraph 2.D (6)(b).
(7)Remove screw clamps
(8)Install grounding leads providing wing-to-pylon electrical bonding (Ref. 20-28-11, P. Block 1).
(9)Remove tool as follows :
(a)Change balance of trolley by placing counter weight in empty trolley position.
(b)Separate trolley from pylon by removing tool-fitting at bearings (two bearings at RIB9C and one at RIB1).
(c)Place trolley on the ground
(d)Remove tool fittings at RIB9C and RIB1 and stow them in transportation container.
(10)Remove hoist slings from trolley.

**ON A/C 006-100,

(6)On aft attach fitting
(a)Position both shackles and hold them in placed with two screw clamps
(b)Installation procedure for both upper fail-safe fasteners is identical:
1 Coat the grip length of sleeves (121) with Material No. 04-004.
2 Install sleeve (121) using tool 98A54003084000. The threaded portion must be directed towards the rear of the pylon.
NOTE : Use tool 98A54003084002 for the two upper sleeves and tool 98A54003084003 for the lower sleeve.
3 Install new lock washer (126).
4 Tighten nut (123) up to stop on sleeve (121).
5 Hold sleeve (121) and TORQUE nut (123) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Safety nut (123) by bending the tab of lock washer (126).
6 Coat the threaded section of bolt (122) with Material No. 04-007 and insert the screw in sleeve (121). The threaded portion must be directed towards the rear of the pylon.
7 Hold bolt (122) by means of wrench 65303A4351M000 and tighten nut (124) using tool 65375AB351M000 equipped with a torque wrench.
8 TORQUE nut (124) to between 4 and 5 m.daN (29.5 and 36.8 lbf.) using tool 65375AB351M000 equipped with a torque wrench. Install cotter pin.
(c)Install the lower fail safe fastener as described in paragraph 2.D (6)(b).
(7)Remove screw clamps
(8)Install grounding leads providing wing-to-pylon electrical bonding (Ref. 20-28-11, P. Block 1).
(9)Remove tool as follows:
(a)Change balance of trolley by placing counter weight in empty trolley position.
(b)Separate trolley from pylon by removing tool-fitting at bearings (two bearings at RIB9C and one at RIB1).
(c)Place trolley on the ground
(d)Remove tool fittings at RIB9C and RIB1 and stow them in transportation container.
(10)Remove hoist slings from trolley.

**ON A/C 001-100,

(11)Connect throttle control cable as follows:
(a)Install cable (34) in pulley (35) groove.
(b)Insert cable in grooves of pulleys (33) and in cable guide slot of pulley support bracket.
(c)Secure cable guides to pulley (33) brackets.
(d)Install cable guide (36) stop on pulley (35) with two screws (37).
(e)Install flange (30) and nuts (29).
(f)Connect cable threaded ends to turnbuckles in zone 145 (146). Tighten the cables (Ref. 76-11-31, P. Block 401, 76-11-00, P. Block 501). Safety turnbuckles with safety clips.
(12)Connect fuel line as follows (Ref. Fig. 404):
NOTE : Replace all O-rings at upper, center and lower connections. (Ref. Fig. 404) (Detail A)

(Ref. Fig. 405) (Details B and C)

CAUTION : FUEL LINES MUST NOT SHOW EVIDENCE OF SHARP BENDS, PUNCHMARKS OR DEFORMATION.

(a)Engage upper line with coupling on wing.
(b)Engage lower line with coupling on pylon.
(c)Tighten coupling nut (9) and wirelock.
(d)Slide on sleeve (43) and install the two halfshells (7).
(e)Install bonding lead (6) (Ref. 20-28-11, P. Block 1).
(f)Install end-fitting (46) on fuel drain line (Ref. 20-23-11, P. Block 1).
(g)Tighten coupling nut (48) and wirelock.
(h)Install bonding lead (47) (Ref. 20-28-11, P. Block 1).
(i)Install flange (42) and tighten nuts (41).
(j)Tighten nut (40) and wirelock.
(k)Install and tighten bolts (44) (Ref. 20-23-12, P. Block 1).
(l)Carry out a leakage test of double-wall fuel line (Ref. 28-21-00, P. Block 501).

(13)Connect electrical wiring as follows:
(a)Install cable bundle (1) and connect it to junction box (3).
(b)Install clamp blocks (3).

R (14)Connect electrical connector (52) and install clamps.
(15)Install air bleed duct (Ref. 36-11-00, P. Block 401).
(16)Remove plugs and connect electrical connectors (2).
(17)Secure pylon aft structure fitted with hydraulic and pneumatic lines to wing lower surface (Ref. 54-54-00, P. Block 401).
(18)Install hoses and fire extinguisher bottles (Ref. 26-21-15, P. Block 401), install bottle electrical wiring and connect pressure switch (2), cartridge (4) and HP fuel shut off valve plugs.

(19)Manually extend the slats (Ref. 27-80-00, P. Block 301).

(20)Install engine (Ref. 71-00-00, P. Block 401).
(21)Install lower fairing (Ref. 54-55-00, P. Block 401).
(22)Install engine cowls (Ref. 71-13-02, 71-13-03, P. Block 401).

E. Close-Up

(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(3)Remove rigging pins from throttle controls (Ref. 76-11-00, P. Block 1, 76-11-00, P.Block 401, 76-11-00, P. Block 501)
- Item 98A27901005000 from cable tension regulator between FR11 and FR12.
- Item 98A76101003000 from autothrottle coupling unit.
- Item 99A76101501000 and 99A76101500000 from primary transmission.

(4)Install panel 131SW (132SW)
(5)Install panels and access doors removed at para. 2.A.
(6)Check peripheral gap between panels and rubber seal compression (Ref. 54-50-00, P. Block 601) and adjust if necessary.
(7)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(8)Make certain that electronics racks ventilation is correct.
(9)Make certain that flap and slat control lever is still in second notch.
(10)Top-up Green hydraulic reservoirs (Ref. 12-12-29, P. Block 1).

(11)Pressurize Green hydraulic reservoirs (Ref. 29-14-00, P. Block 301).
(12)Remove warning notices from flap and slat control lever and place lever in RET position.
(13)De-energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(14)Check for leakage in pneumatic system downstream of pressure regulator valves (Ref. 36-11-00, P. Block 601).
(15)Carry out engine fire extinguishing system functional test (Ref. 26-21-00, P. Block 501).
(16)Remove access platforms.
(17)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

PYLONS - REMOVAL/INSTALLATION

WARNING : PRIOR REMOVAL OF THE ENGINE IS MANDATORY.
BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON FUEL SYSTEM, MAKE CERTAIN THAT FIRE EXTINGUISHING EQUIPMENT IS AVAILABLE IN PROXIMITY TO WORKING AREA.

MAKE CERTAIN THAT LANDING GEAR GROUND SAFETIES INCLUDING WHEEL CHOCKS ARE IN POSITION.

BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON ENGINE PYLON, LOCK FLAP AND SLAT CONTROL LEVER TO PROHIBIT MANEUVERS.

CAUTION : TO PREVENT DAMAGE, CONTAMINATION AND INGESTION OF FOREIGN MATTER, PIPES, PNEUMATIC DUCTS AND ELECTRICAL CONNECTORS SHALL BE CAPPED.

NOTE : Removal/Installation procedure is identical for both engine pylons.

1. Equipment and Materials

	ITEM	DESIGNATION
R	1. 98A54003002000	Trolley-Pylon Removal/Installation
	2.	Chain Hoist, 4 tons (9000 lbf.)
	3. 98A54003003000	Storage Frame
	4. 98A54003013000	Gear - Hoisting, Pylon
	5. 65303A4351M000	Pin Wrench
	6. 98A26213501000	Special Wrench
	98A26213502000	Special Wrench
	7. 98A29113501000	Special Wrench
	98A29113502000	Special Wrench
	98A29113503000	Special Wrench
	8. 65375AB351M000	Special Wrench
	9.	Cotter Pins
	10.98A27901005000	Rigging - Pin, Throttle Control
	11.98A76101003000	Rigging Pin - Autothrottle Coupling Unit
	12.98A54003022000	Extractors- Sleeve, RIB12/RIB18
	13.98A54003084000	Inserting Tool - Sleeve, RIB 12/RIB 18
R	14.	Torque Wrench 4 m.daN (29 lbf. ft.)
R	15.Material No. 04-004	Common Greases (Ref. 20-31-00)
R	16.Material No. 04-007	Common Greases (Ref. 20-31-00)
R	17.Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
R	18.	Access Platforms 4 m (13 ft. 1 in.)
R	19.	Containers
R	20.	Blanking Caps (Electrical Connectors)
R	21.	Blanking Caps (Hydraulic Couplings)
R	22.	Circuit Breaker Safety Clips
R	23.	Lock Washers - Special
R	24.	Protective Closures
	Referenced Procedures	
	- 06-41-54, P. Block 1	Nacelles and Pylons
	- 12-12-29, P. Block 1	Hydraulics
	- 20-23-11, P. Block 1	Installation and Repair of Tubing

ITEM	DESIGNATION
- 20-23-12, P. Block 1	Specified Torque Values for Unions
- 20-28-11, P. Block 1	Electrical Bonding
- 24-41-00, P. Block 301	AC External Power Control
- 26-21-00, P. Block 501	Engine Fire Extinguishing
- 26-21-15, P. Block 401	Fire Extinguisher Bottle
R	
R - 27-80-00, P. Block 301	Lift Augmenting (Slats and Krueger
R	Flaps)
R - 28-00-00, P. Block 401	Fuel - General
R - 28-20-00, P. Block 401	Distribution
- 28-21-00, P. Block 501	Fuel Pump System
- 29-14-00, P. Block 301	Hydraulic Reservoir Pressurizing System
- 29-21-00, P. Block 301	Green Auxiliary Power
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-00, P. Block 601	Engine Bleed Air Supply System
- 54-54-00, P. Block 401	Aft Fairing
- 54-50-00, P. Block 601	Pylons
R - 54-51-72, P. Block 801	Forward Attach Fitting (RIB12)
- 54-55-00, P. Block 401	Lower Fairing
R	
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Cowl Doors
- 71-13-02, P. Block 401	Fan Cowl
- 71-13-03, P. Block 401	Fan Thrust Reverser Cowl
- 76-11-00, P. Block 401	Throttle Controls
- 76-11-00, P. Block 501	Throttle Controls
- 76-11-31, P. Block 401	Secondary Transmission

2. Procedure

NOTE : Hang-up the four-arm handling sling from tool 98A54003002000 to a four ton chain hoist so as to facilitate engine pylon removal/installation. The assembly shall be maneuvered by means of a crane or a traveling crane (Ref. Fig. 401).

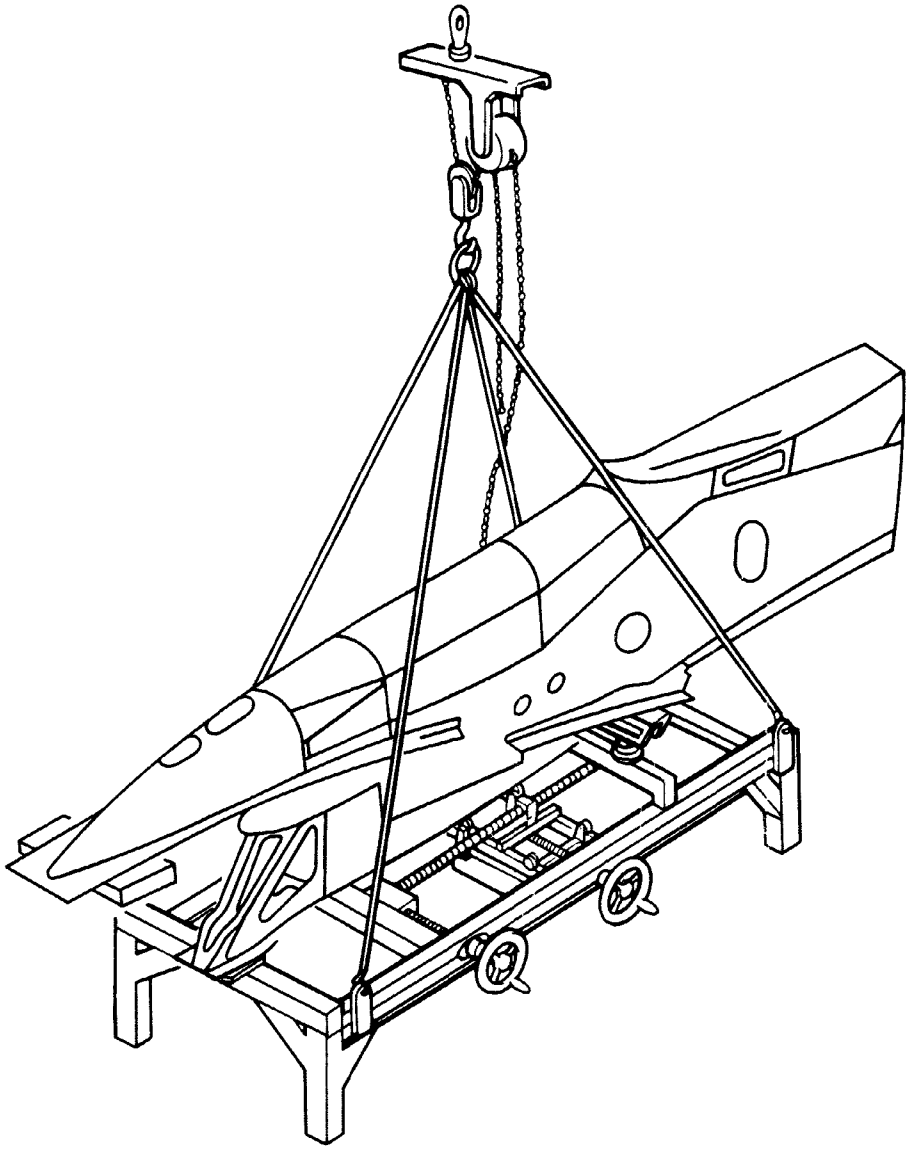
NOTE : The equipped pylon weighs 1085 kg (2395 lb) approx and unequipped pylon 825 kg (1821 lb) approx.

A. Job Set-Up

(1)Remove engine cowl doors (Ref. 71-13-02, 71-13-03, P. Block 401).
(2)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(3)Make certain that electronics racks ventilation is correct.
(4)By means of the electric pumps, pressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).
(5)Place flap and slat control lever in second notch to extend slats.
- Place a warning notice prohibiting operation of flap and slat control lever.

NOTE : Slats must be extended to gain access to panel 512AT (612AT).

(6)Depressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).
(7)Cut off supply to electric pumps and to electrical ground power unit.



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R Pylon Removal/Installation Trolley
Figure 401

(8)Position access platforms at cargo compartment door.
(9)In forward cargo compartment,
- Remove panel 131SW (132SW) giving access to autothrottle coupling unit and to turnbuckles (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).

(10)Install the following rigging pins on throttle control cable routing : (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).
- item 98A27901005000 in cable tension regulator between FR11 and FR12
- item 98A76101003000 in autothrottle coupling unit

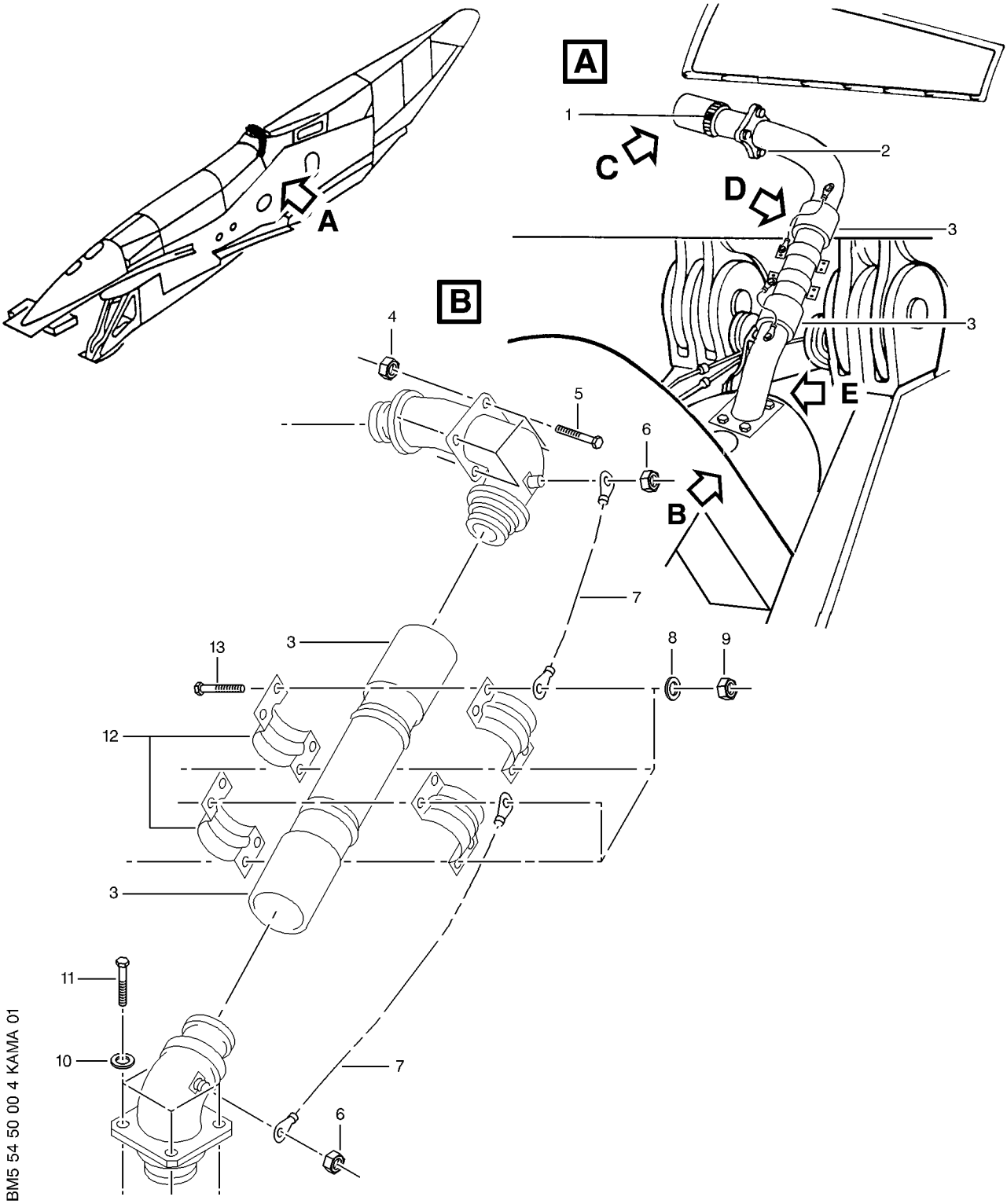
(11)Remove engine (Ref. 71-00-00 P. Block 401)
WARNING : ENGINE REMOVAL IS MANDATORY BEFORE PYLON REMOVAL

(12)On engine pylon (Ref. 06-41-54, P. Block 1)
(a)Open access doors
474AR (484AR) - 473AL (483AL) - 411BL (421BL)
416AR (426AR) - 415AL (425AL) - 411CL (421CL)
(b)Open pressure relief doors 471BL (482BR) - 413AL (423AL) - 414AR (424AR)
(c)Remove the following skin panels from : LH engine pylon
413BL, 413DL, 471AL, 472AR, 472BR, 473BL, 474BR, 473CL, 474CR, 414ER, 413EL, 413CL, 414CR, 474DR, 413EL.
RH engine pylon
423BL, 421CL, 423CL, 424CR, 481AL, 482AR, 483BL, 484BR, 483CL, 484CR, 424ER, 423EL, 483DL, 423DL, 423EL.

(13)Remove skin panel 512AT(612AT)
(14)Remove lower fairing (Ref. 54-55-00, P. Block 401).
(15)Remove fire extinguisher bottles and associated hoses (Ref. 26-21-15, P. Block 401).

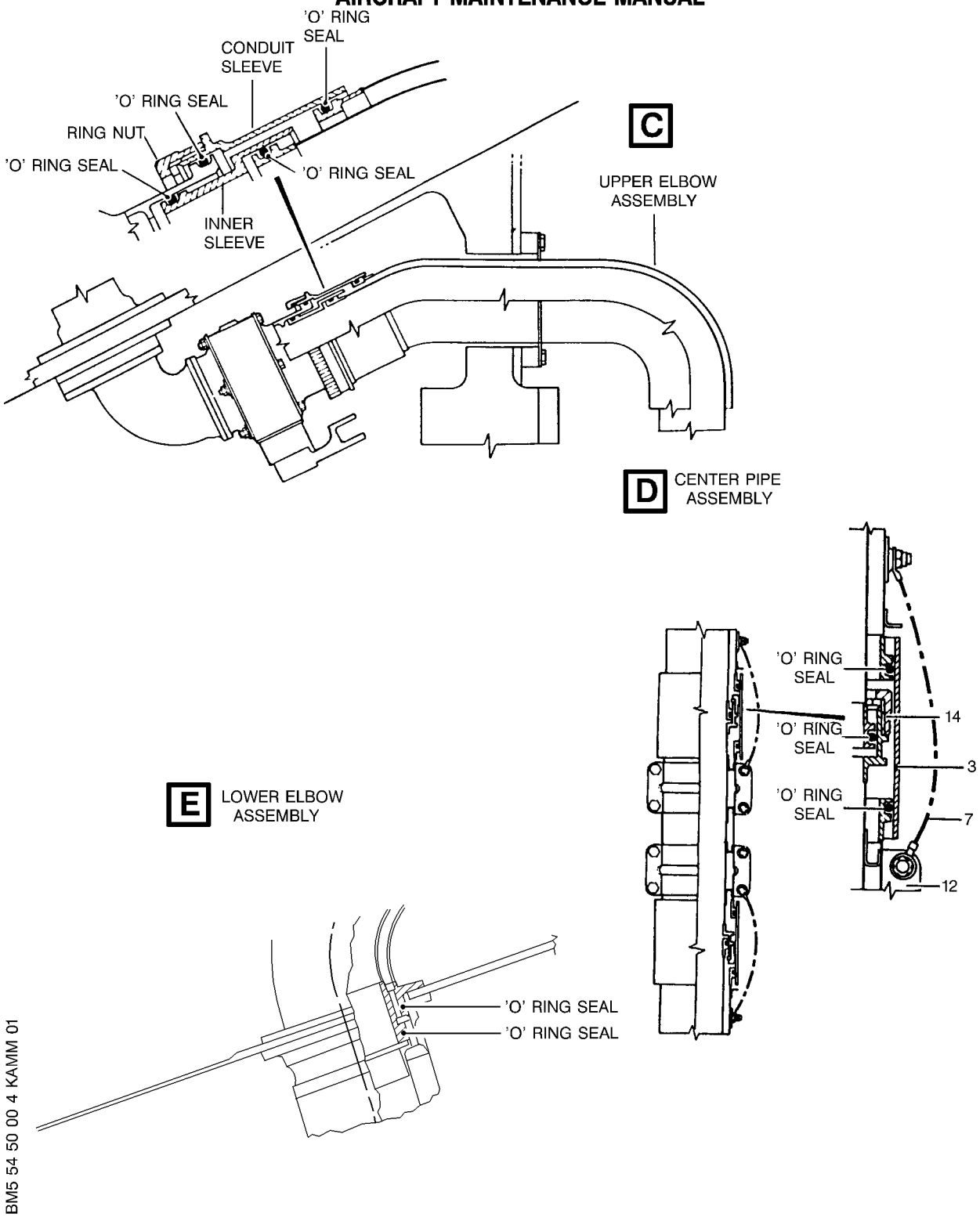
R B. Removal
R (1)Disconnect electrical connectors at wing-to-pylon interface and install blanking caps.
R (2)Open clamp blocks attaching electrical cables between wing and RIB10A. Stow cables.
R (3)Remove bleed air duct (Ref. 36-11-00, P. Block 401).
R (4)Remove the section of fuel line located between inboard and outboard attach fittings of engine pylon and disconnect fuel line as follows: (Ref. Fig. 402)
R (a)Disconnect coupling halves (3) as follows:
R 1 Remove nuts (6).
R 2 Remove nuts (9), washers (8) and bolts (13).
R 3 Disconnect bonding leads (7) (Ref. 20-28-11, P. Block 1).
R 4 Remove the four half-shells (12).
R 5 Slide off the sleeve of the coupling halves (3) until nuts (14) are free.
R 6 Loosen coupling nuts (14).
R (b)Remove fuel line from pylon upper spar as follows:
R 1 Remove screws (11) and washers (10).
R 2 Disengage fuel line at level of pylon.
R (c)Remove fuel line at level of wing as follows:
R 1 Loosen coupling nut (1).
R 2 Remove bolts (5) and nuts (4) and remove flange (2).

R 3 Disengage fuel line at level of wing.
R (5)Disconnect air pressure sensors electrical connectors and install
R blanking caps.
R (6)Disassemble and remove aft pylon structure from lower surface
R (Ref. 54-54-00, P. Block 401).
R (7)Manually retract the slats (Ref. 27-80-00, P. Block 301).
R (8)Make certain that trolley-pylon R/I 98A54003002000 is balanced
R (counterweight placed in empty trolley position). Balance trolley if
required.
R (9)Slightly lift trolley from ground and ensure perfect balance.
R (10)Raise trolley by means of a travelling crane or crane and complete
positioning manually using a chain hoist.
R (11)Attach trolley to pylon through engine mounts.
(12)Disconnect grounding leads at wing-to-pylon junction.
R (13)Balance trolley by placing counter weight in loaded position.
NOTE : Make certain that counterweight lateral position is in RH or LH
engine pylon configuration according to the pylon to be
R removed. These positions are those noted on trolley at engine
pylon first removal/installation.
(14)Take up slack in handling slings.
(15)On each FWD engine pylon attach fitting
(Ref. Fig. 403)
(a)Discard cotter pin (105) and remove nut (104) using tools
65303A4351M000 and 65375AB351M000.
(b)Remove bolt (102).
(c)Infold lockwasher tab, remove nut (103) and discard lock washer (106)
using a thin spanner and tool 65375AB351M000.
(d)Remove bush (101) using extractor 98A54003022000.
(16)On aft pylon attach fitting :
(a)Remove the three fail-safe fasteners using the same procedure for
each one.
1 Remove and discard cotter pin (135) or (125).
2 Remove nut (134) or (124) using tools 65303A4351M000 and
65375AB351M000.
3 Remove bolt (132) or (122).
4 Unfold lockwasher tab, remove nut (133) or (123) and discard lock-
washer (136) or (126).
5 Remove bush (131) or (121) using extractor 98A54003022000.
CAUTION : BALANCE PYLON USING COUNTER-WEIGHT ON ENGINE PYLON FRAME.
IF NECESSARY CORRECT CENTERING BY MOVING COUNTER-WEIGHT.
(17)Start lowering pylon using chain hoist. Make certain that during this
operation FWD attach fitting shackles and spigot ball joint are not
subjected to adverse loads that may result in damage.
(18)Lower pylon by means of the crane or travelling crane and position it
on the ground using chain hoist.
R (19)Remove handling slings from trolley 98A54003002000.
R (20)After pylon removal, check the correct alignment of RIB12 fitting
R bushes bores by manually inserting the sleeves into their housings.
R If there are difficulties of insertion, repair bushes have to be
R installed (Ref. 54-51-72, P. Block 801).



Fuel Line between Fitting and Bulkhead Pylon
(Sheet 1/2)
Figure 402

R



Fuel Line between Fitting and Bulkhead Pylon
(Sheet 2/2)
Figure 402

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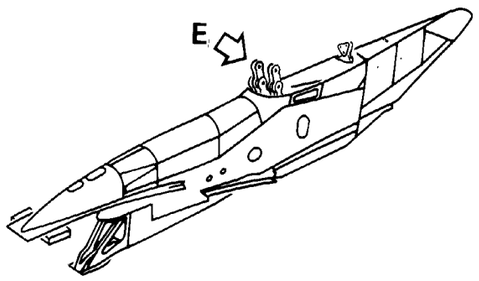
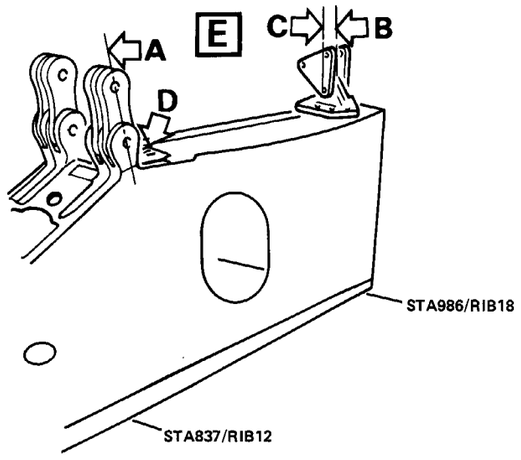
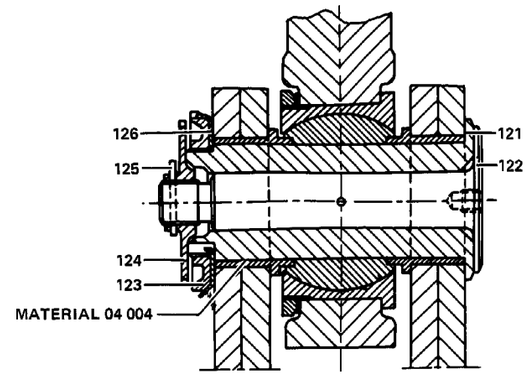
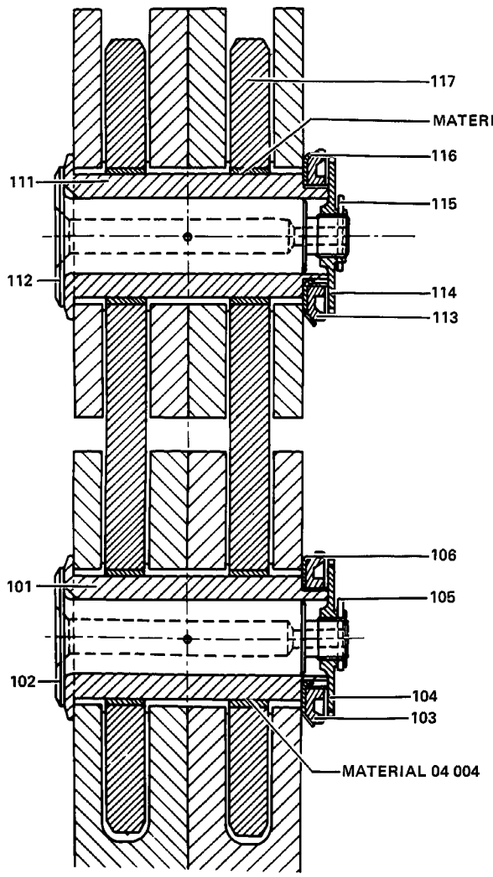




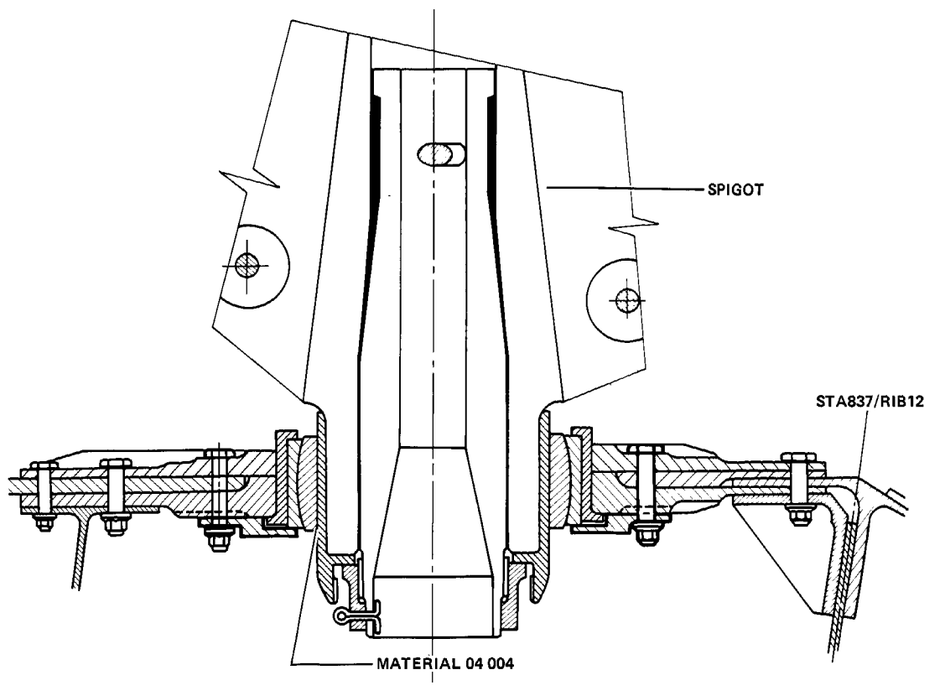


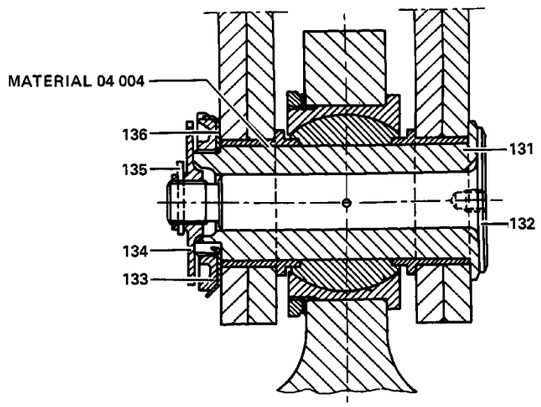
SECTION B-B

SECTION A-A



SECTION D-D





SECTION C-C

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Wing-to-Pylon Attach Fitting
Figure 403

C. Preparation of Replacement Component

(1)In the case of engine pylon replacement, carry out the following steps :

(a)On removed engine pylon :

NOTE : Tools 98A54003017000, 98A54003014000, 98A54003007000, 98A54003004001 are sub-assemblies of tool 98A54003013000.

1 Attach cross beam 98A54003014000 to engine hoist fittings at RIB6.

2 Install hoisting beam 98A54003007000 on FWD pylon-to-wing attach fitting.

3 Adjust hoisting ring of tool 98A54003004001 and balance tool using lateral counterweights.

4 Hook hoist beam 98A54003004001 onto chain hoist and raise it up to FWD pylon-to-wing attach fitting level.

5 Attach slings of hoist beam 98A54003004001 to beams 98A54003014000 and 98A54003007000.

6 Take-up slack in slings of tool 98A54003004001.

7 Disassemble pylon from hoist beam 98A54003004001 and position it above storage frame 98A54003003000.

8 Install engine pylon manually onto storage frame 98A54003003000 and secure it.

9 Remove handling equipment tools 98A54003004001 and 98A54003014000.

(b)On replacement pylon :

1 Depreserve replacement pylon.

2 Attach hoist beam 98A54003004001 and cross beam 98A54003014000 as indicated in para. 2.C.1 (a).

3 Remove engine pylon from transportation container with chain hoist.

R 4 Position pylon over trolley 98A54003002000 using either a crane or traveling crane.

R 5 Complete manually pylon positioning over trolley 98A540032000 using chain hoist.

R 6 Secure engine pylon on trolley 98A54003002000 by means of engine attach fittings.

7 Remove handling equipment, tool 98A54003017000, 98A54003004001 and 98A54003014000.

8 Make certain that replacement pylon especially at engine-to-pylon and pylon-to-wing junctions is in correct condition.

9 Transfer parts retained from removed pylon to new pylon after cleaning and check for correct condition.

WARNING : AS SOME PYLON COMPONENTS ARE IN TITANIUM, CLEANING WITH TRICHLORETHYLENE MAY RESULT IN SERIOUS DAMAGE TO PYLON.

(2)In the case of repair or check for which pylon replacement is not necessary, carry out visual checks.

(3)Remove fail-safe fasteners on wing side (Ref. para. 2.B.(18) and remove shackles.

(4)Clean using Material No.11-003 :

- Spigot fitting
- forward and aft shackles
- yokes attached to wing and pylon
- bolts (102) and (112)
- ball joint attach fitting on engine pylon
- sleeves (101) and (111)

(5)Check shackles of forward and aft attach fittings for condition and

replace if necessary.
(6)Check dimensions of forward and aft fail safe fasteners.
Change bolts and/or sleeves if necessary.
(7)On wing, check yokes of forward and aft attach fittings secured to wing and spigot fitting for correct condition.
(8)On engine pylon, check pylon-to-wing attach fittings
(a)Check of yokes attached to RIB12
(9)On wing
Coat spigot fitting and bores of shackles attached to wing lower surface
R with Material No. 04-004.
(10)Install shackles and fail-safe bolts as follows :
(a)Install shackles (117) in yokes attached to wing.
R (b)Coat sleeves (111) plain length with Material No. 04-004 and threaded section with Material No. 04-007.
(c)Install sleeve in bore by placing threaded section on throttle control pulley side, using tool 98A54003084000.
(d)Install a new lock washer (116)
(e)Screw nut (113) until it abuts sleeve (111) without tightening
(f)While holding sleeve (111) fixed, TORQUE nut to between 4 and 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric wrench. Safety
nut (113) by folding lock washer (116) tab.
(g)Coat bolt (112) threads with Material No. 04-007 and insert it into sleeve (111) with the threaded section toward throttle control pulley side.
(h)Hold bolt (112) fixed using pin wrench 65303A4351M000 and tighten nut (114).
(i)TORQUE nut (114) to between 4 and 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (115).
R (j)By means of the shim make certain that the play between the washer
R (116) and the side of the yoke is at least 0.1 mm (0.0039 in.).
(11)On replacement pylon :
Coat the ball joint receiving the spigot fitting, forward and aft attach
R fittings with Material No. 04-004.
(12)Protect engine pylon with rubber mats to avoid damage
R (13)Make certain that trolley 98A54003002000 is properly balanced (counter-weight in loaded position).

R D. Installation
R (1)Secure handling sling of frame to chain hoist and take up slack.
R (2)Slightly lift frame and check the assembly for correct balance.
R (3)Lift engine pylon to required height and position it at wing lower
R surface attach fittings.
R (4)Complete pylon positioning manually using chain hoist and check that
R spigot engages correctly in ball joint and shackles in yokes.
R (5)On FWD attach fittings
R (a)Install FWD attach fitting fail safe fasteners, starting from
R inboard attach fitting
R 1 Coat the grip length of sleeve (101) with Material No. 04-004 and
R the threaded section with Material No. 04-007.

R 2 Install sleeve using tool 98A5400384000. The threaded section of the bolt must be placed on throttle control pulley side.
R 3 Install a new lock washer (106).
R 4 Tighten nut (103) up to stop on sleeve (101).
R 5 Hold sleeve (101) by means of a spanner and TORQUE nut to between 4 and 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric wrench. Safety nut (103) by bending the tab of lock washer (106).
R 6 Coat the threaded portion of bolt (102) with Material No. 04-007 and insert bolt in sleeve (101) so that the threaded section is on throttle control pulley side.
R 7 Hold bolt (102) by means of wrench 65303A4351M000 and tighten nut (104). TORQUE nut (104) to 4 and 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric wrench. Install cotter pin (105).
R 8 By means of a shim make certain that the play between the washer (106) and the side of the yoke is at least 0.1 mm (0.0039 in.).
R (6)On aft attach fitting
R (a)Position both shackles and hold them in place with two screw clamps
R (b)Installation procedure for both upper fail-safe fasteners is identical :
R 1 Coat the grip length of sleeves (121) with Material No. 04-004 and the threaded section with Material No. 04-007.
R 2 Install sleeve (121) using tool 98A54003084000. The threaded portion must be directed towards the rear of the pylon.
R 3 Install new lock washer (126).
R 4 Tighten nut (123) up to stop on sleeve (121).
R 5 Hold sleeve (121) and TORQUE nut (123) to between 4 to 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric rod. Safety nut (123) by bending the tab of lock washer (126).
R 6 Coat the threaded section of bolt (122) with Material No. 04-007 and insert the screw in sleeve (121). The threaded portion must be directed towards the rear of the pylon.
R 7 Hold bolt (122) by means of wrench 65303A4351M000 and tighten nut (124) using tool 65375AB351M000 equipped with a dynamometric wrench.
R 8 TORQUE nut (124) to between 4 and 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric wrench. Install cotter pin.
R (c)Install the lower fail safe fastener as described in paragraph 2.D (6)(b).
R (7)Remove screw clamps
R (8)Install grounding leads providing wing-to-pylon electrical bonding (Ref. 20-28-11, P. Block 1).
R (9)Remove tool as follows :
R (a)Change balance of trolley by placing counter weight in empty trolley position.
R (b)Separate trolley from pylon by removing tool-fitting at bearings (two bearings at RIB8 and one at RIB1).
R (c)Place trolley on the ground
R (d)Remove tool fittings at RIB8 and RIB1 and stow them in transportation

container.
(10)Remove hoist slings from trolley.
(11)Install the section of fuel line located between inboard and outboard attach fittings of engine pylon and connect fuel line as follows:
CAUTION : FUEL LINES MUST NOT SHOW EVIDENCE OF SHARP BENDS, PUNCHMARKS, OR DEFORMATION.
NOTE : Replace all O-ring at upper, center and lower connections (Ref. Fig. 402)
(a)Install fuel line at level of wing as follows:
1 Engage fuel line at level of wing.
2 Install flange (2), nuts (4) and bolts (5). Tighten bolts (5).
3 Tighten coupling nut (1).
(b)Install fuel line on pylon upper spar as follows:
1 Engage fuel line at level of pylon.
2 Install washers (10) and screws (11). Tighten screws (11).
(c)Connect coupling halves (3) as follows:
1 Tighten coupling nuts (14).
2 Slide on the sleeves of the coupling halves (3).
3 Install the four half-shells (12).
4 Connect bonding leads (7) (Ref. 20-28-11, P. Block 1).
5 Install bolts (13), washers (8) and nuts (9). Tighten bolts (13).
6 Install nuts (6). Tighten nuts (6).
(d)Carry out a leakage test of double-wall fuel line (Ref. 28-21-00, P. Block 501).
(12)Install air bleed duct (Ref. 36-11-00, P. Block 401).
(13)Remove blanking caps at wing-to-pylon interface and connect electrical connectors.
(14)Install clamp blocks attaching electrical cables between RIB10A and wing.
(15)Remove blanking caps and connect air pressure sensors electrical connectors on support plate in wing.
(16)Secure pylon aft structure fitted with hydraulic and pneumatic lines to wing lower surface (Ref. 54-54-00, P. Block 401).
(17)Install hoses and fire extinguishers bottles (Ref. 26-21-15, P. Block 401), install bottle electrical wiring and connect pressure switch (2), cartridge (4) and HP fuel shut off valve plugs.
(18)Manually extend the slats (Ref. 27-80-00, P. Block 301).

(19)Install engine (Ref. 71-00-00, P. Block 401).
(20)Install lower fairing (Ref. 54-55-00, P. Block 401).
(21)Install engine cowls (Ref. 71-13-01, 71-13-02, 71-13-03, P. Block 401).

E. Close-Up
(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
R (2)On wing, install panels removed at para. 2.A(13)
(3)Remove rigging pins from throttle controls (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).
- Item 98A27901005000 from cable tension regulator between FR11 and FR12.
- Item 98A76101003000 from autothrottle coupling unit.

(4)Install panel 131SW (132SW)
(5)Install panels and access doors removed at para. 2.A.(14)
(6)Check peripheral gap between panels and rubber seal compression (Ref. 54-50-00, P. Block 601) and adjust if necessary.
(7)Connect electrical ground power unit and energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(8)Make certain that flap and slat control lever is still in second notch.
(9)Top-up Green hydraulic tanks (Ref. 12-12-29, P. Block 1).
(10)Pressurize Green hydraulic tanks (Ref. 29-14-00, P. Block 301).
(11)Pressurize Green hydraulic system by means of electric pumps (Ref. 29-21-00, P. Block 301).
(12)Remove flap and slat control lever locking tool and place lever in RET position.
(13)Cut off supply to electric pumps.
(14)De-energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(15)Check for leakage in pneumatic system downstream of pressure regulator valves (Ref. 36-11-00, P. Block 601).
(16)Carry out engine fire extinguishing system functional test (Ref. 26-21-00, P. Block 501).
(17)Remove access platforms.
(18)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

1. Engine Pylon Fairing Panels and Access Doors

NOTE : Those checks shall be carried out after replacement of engine pylon, with engine installed and after removal/installation of any removable fairing panels.

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform - 4 m. (13 ft. 1 in.)
(2)	Warning Notice

B. Procedure

(1)Job set-up

(a)Position access platform at engine pylon

(b)In flight compartment

- on center pedestal, install a warning notice on flap and slat control lever to prevent it being operated.

(2)Inspection/check of fairing panels and access doors.

(Ref. Fig. 601)
(Ref. Fig. 602)
(Ref. Fig. 603)
(Ref. Fig. 604)
(Ref. Fig. 605)

R **ON A/C 101-200,

R Post SB 72-2032 For A/C 101-200,

R (Ref. Fig. 606)

R **ON A/C 101-200,

(Ref. Fig. 607)

(a)Check that flush fitting and peripheral gaps of removable fairing panels are within tolerances.

(b)Check rubber seals for correct condition and check seal compression.

(c)Check main frame access door latching devices for correct condition.

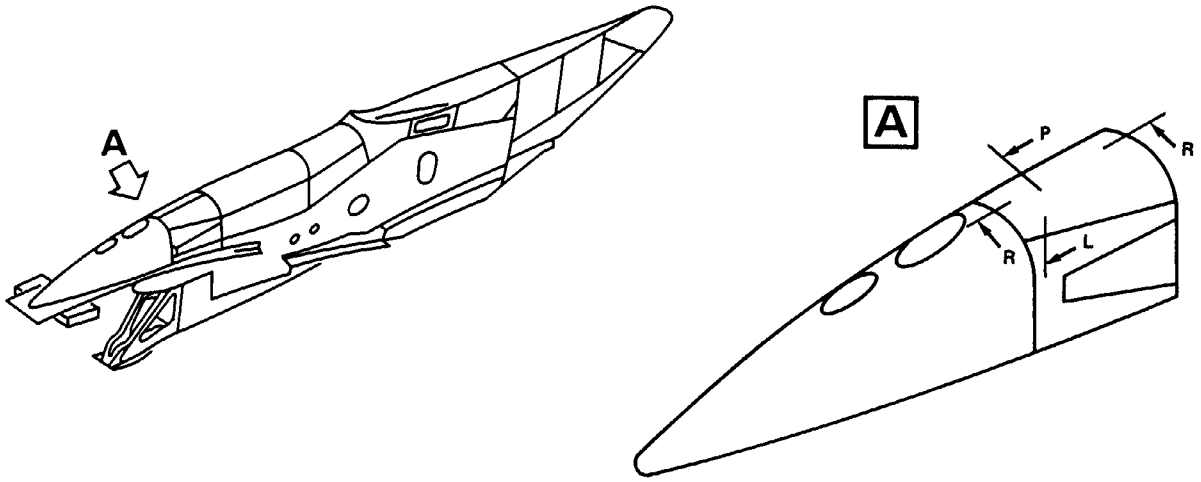
(d)Check that no removable fairing panel attach screw is missing. Check that surface around attach holes is free from cracks.

(e)Check that access doors and fairing panels do not show evidence of distortion or scoring out of permissible limits.

(3)Close-up

(a)Remove engine pylon access platform.

(b)Remove warning notices from center pedestal in flight compartment.



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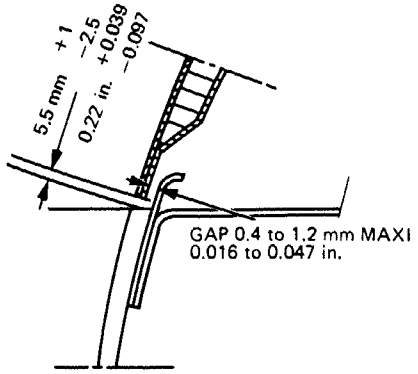

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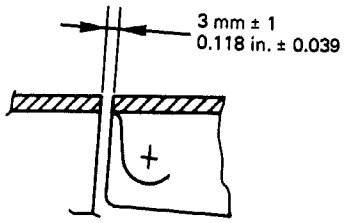

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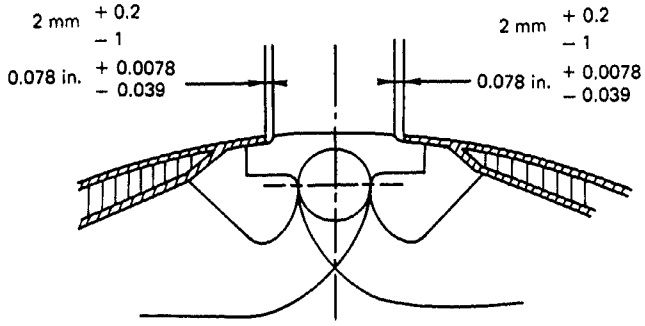
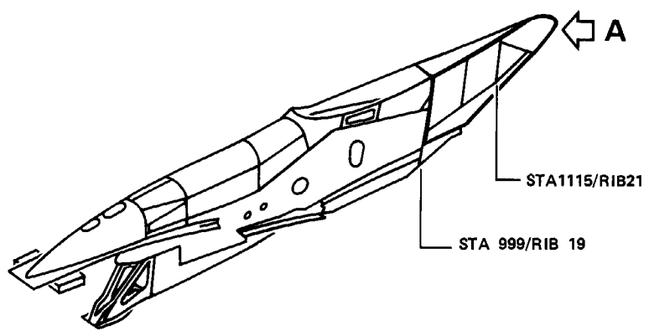
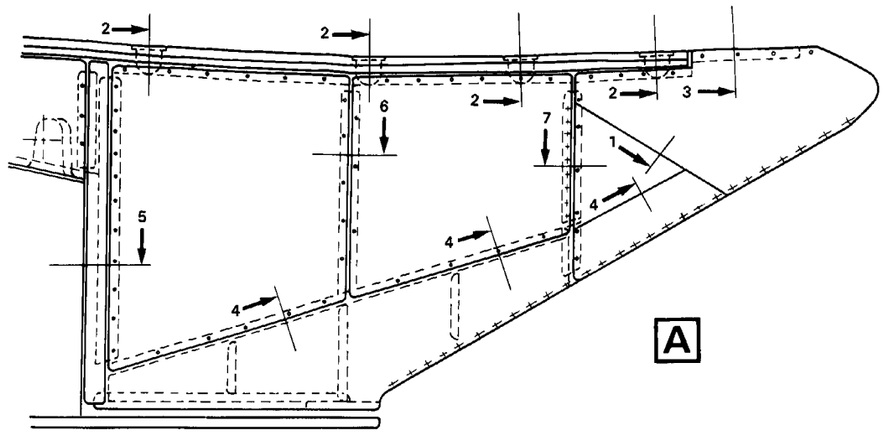


BM5 54 50 00 6 SRLO - 19

Peripheral Gaps and Flush Fitting of Forward Fairing
Overpressure Doors
Figure 601





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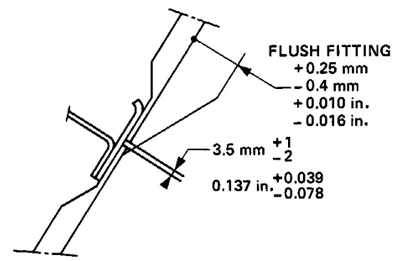

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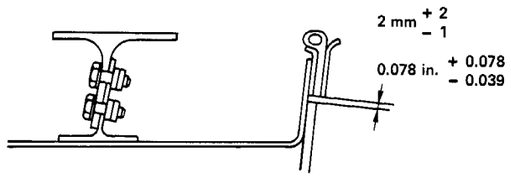

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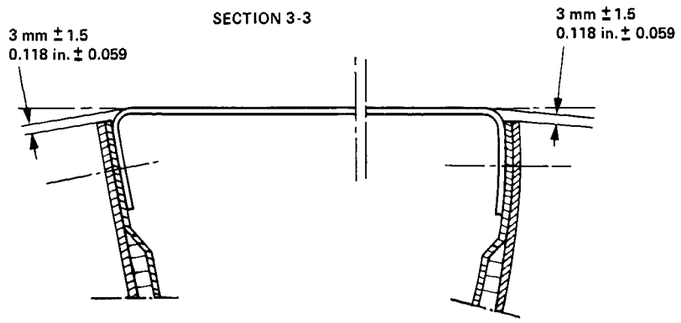

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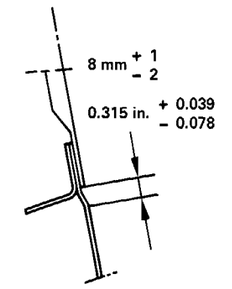

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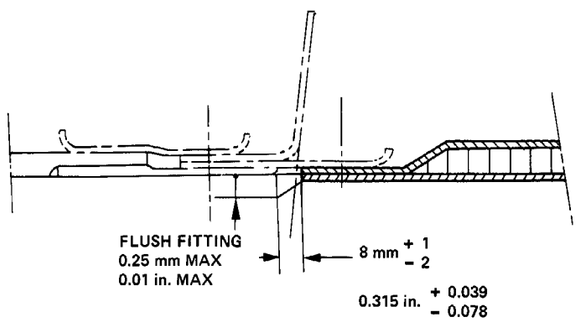

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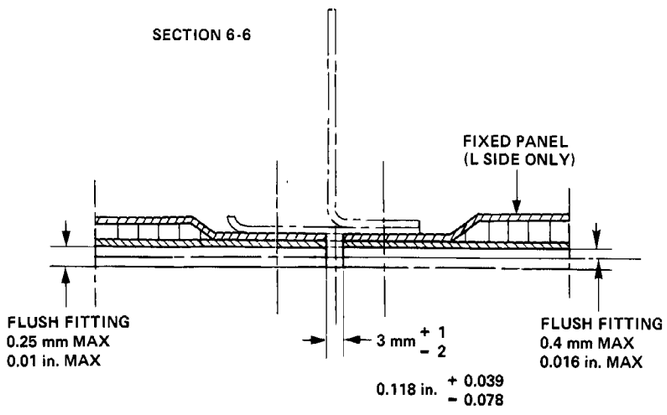

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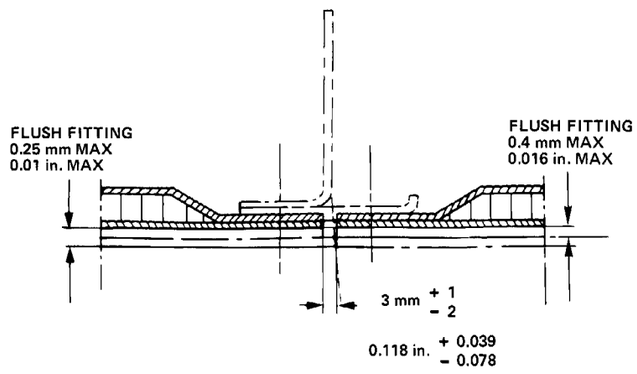

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Peripheral Gaps and Flush Fitting of Aft Fairing - Access Doors and Fairing Panels
Figure 602

EFFECTIVITY: 101-200,

PIA

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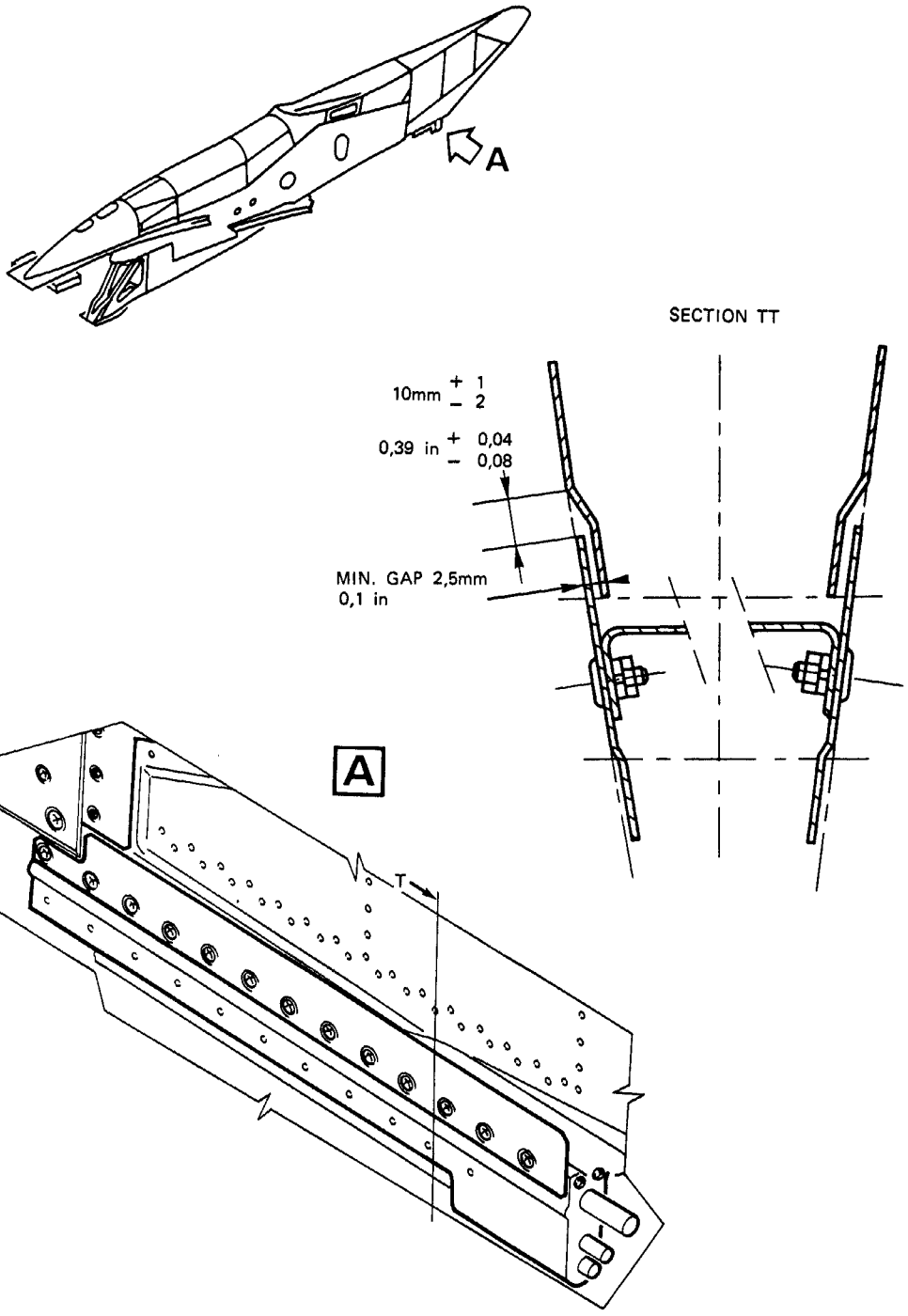

BM5 54 50 00 6 SRZO

Peripheral Gaps and Flush Fitting of Aft Fairing Lower Section
Figure 603

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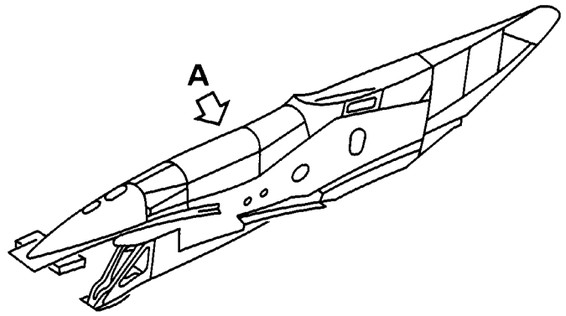
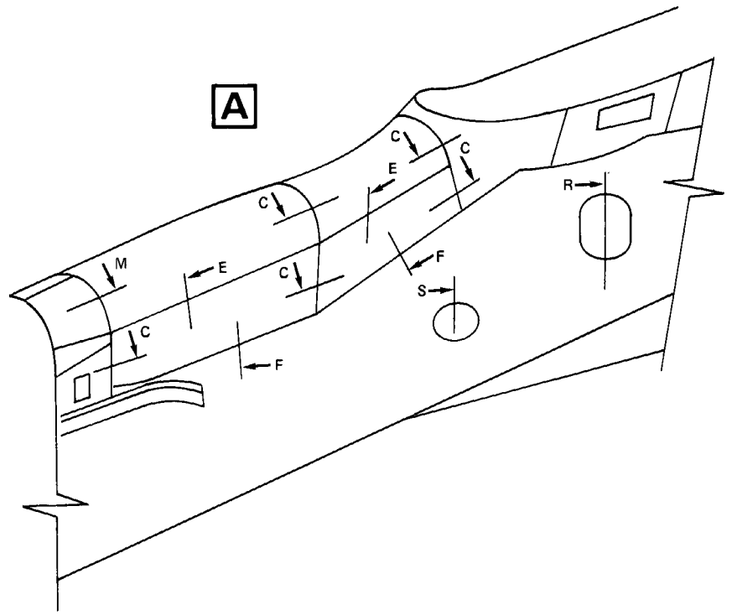
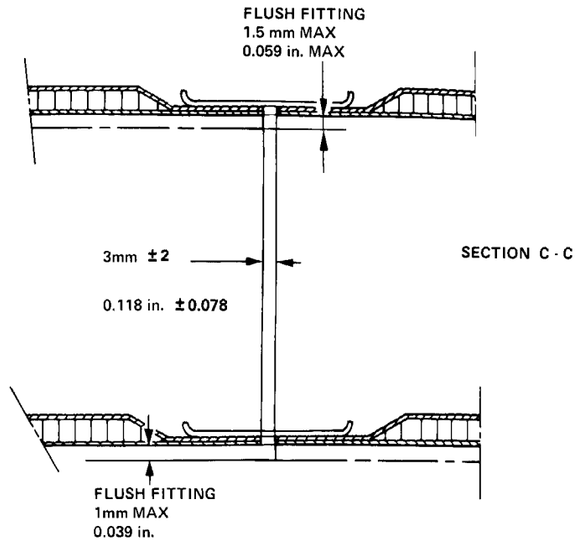
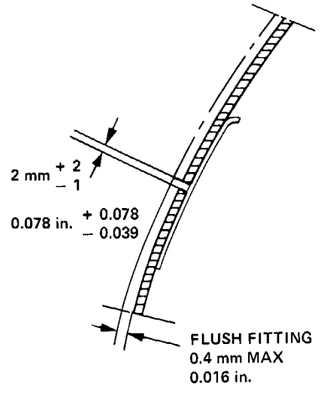






FLIGHT DIRECTION

SECTION E-E



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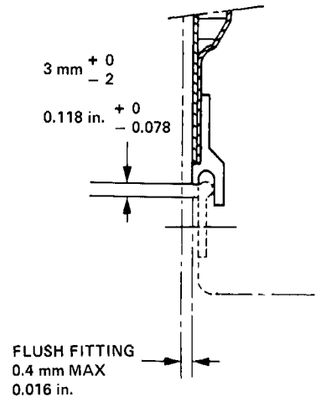

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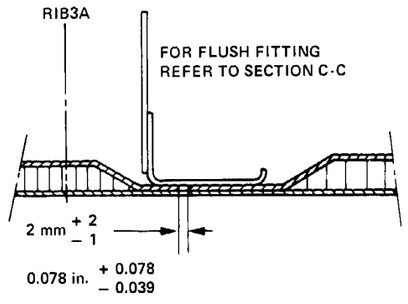

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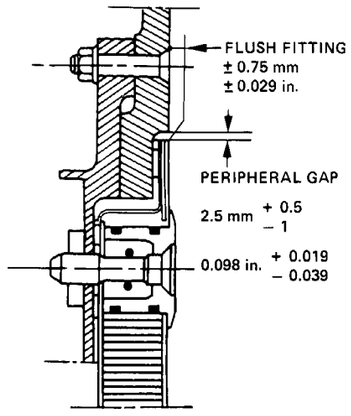

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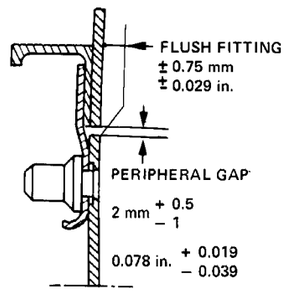

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Peripheral Gaps and Flush Fitting of Forward Fairing
Access Doors and Fairing Panels
Figure 604

EFFECTIVITY: 101-200,

PIA

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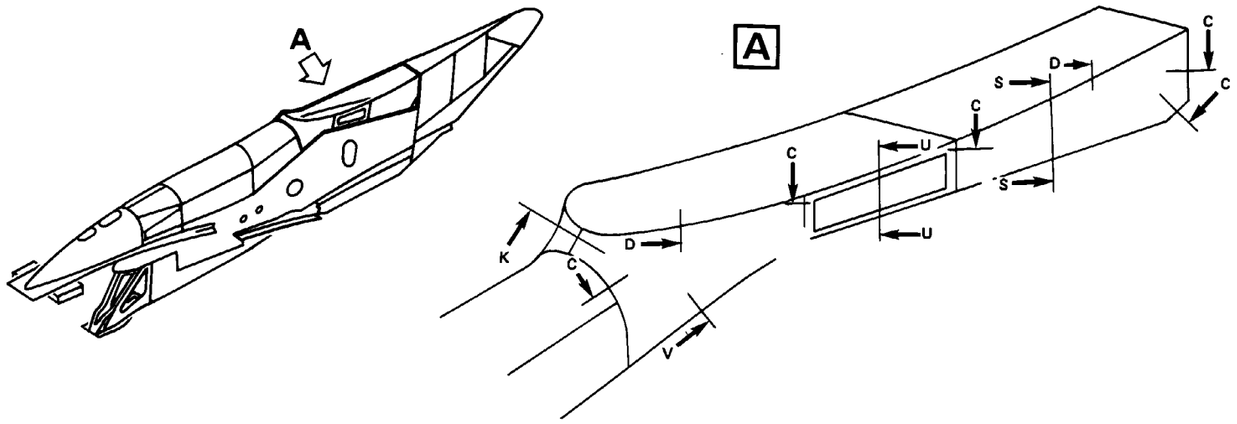
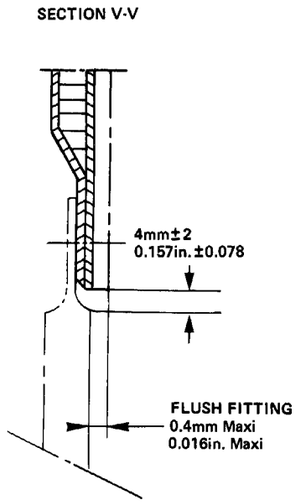
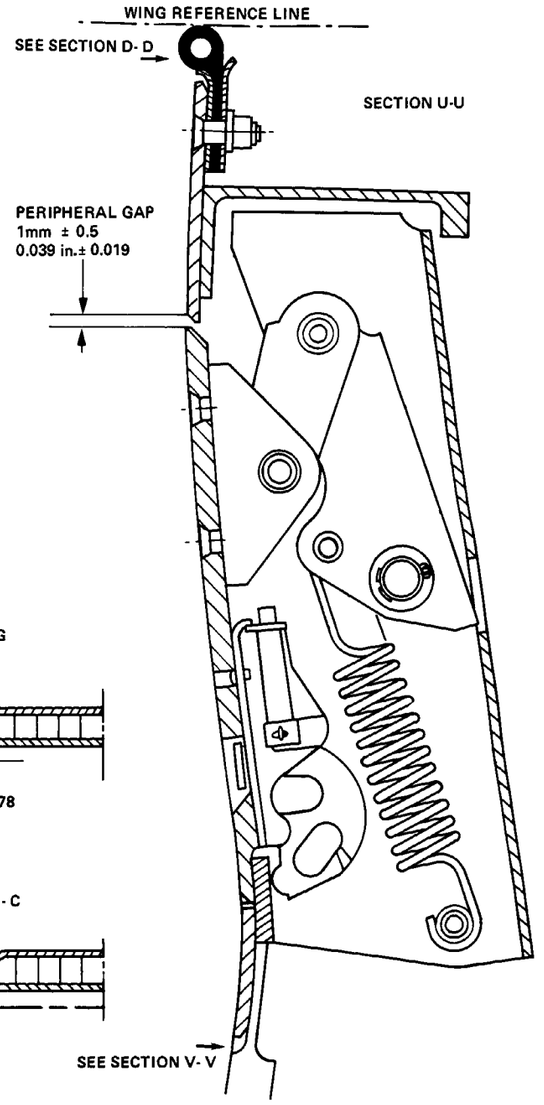
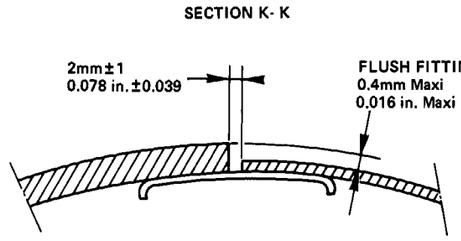
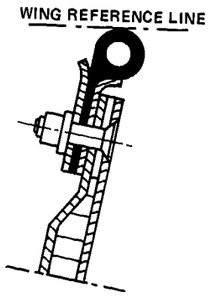
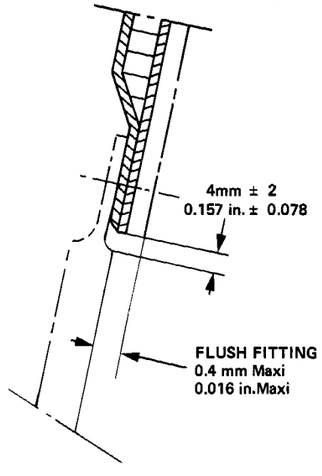


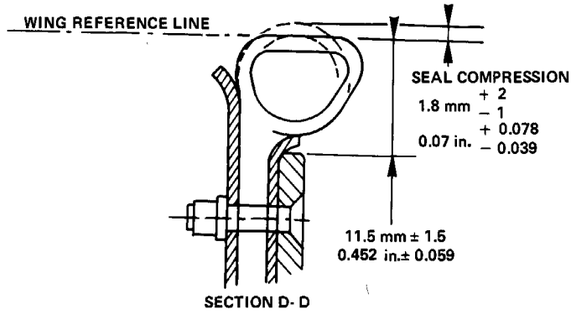


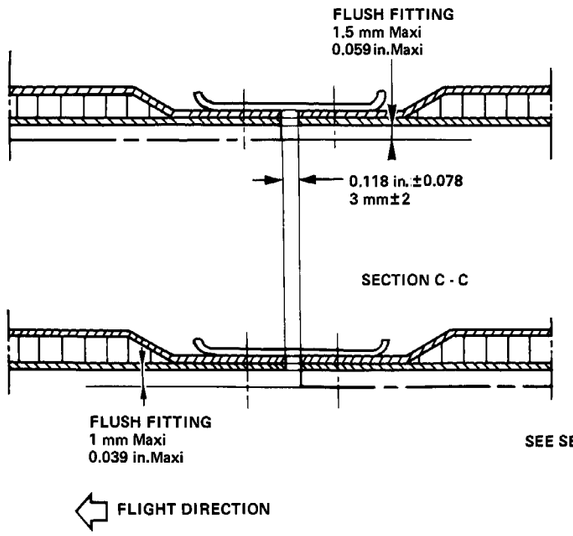






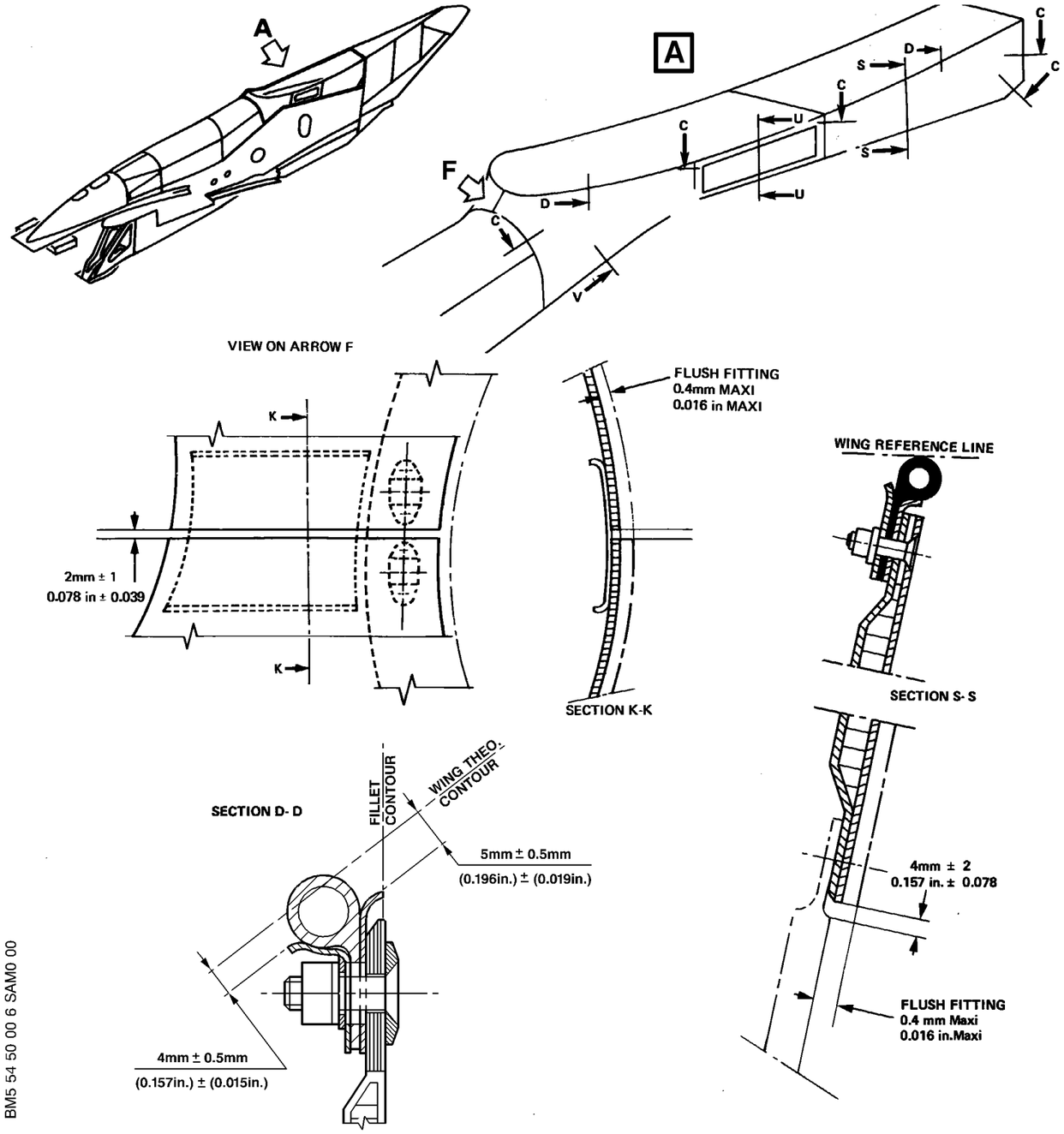


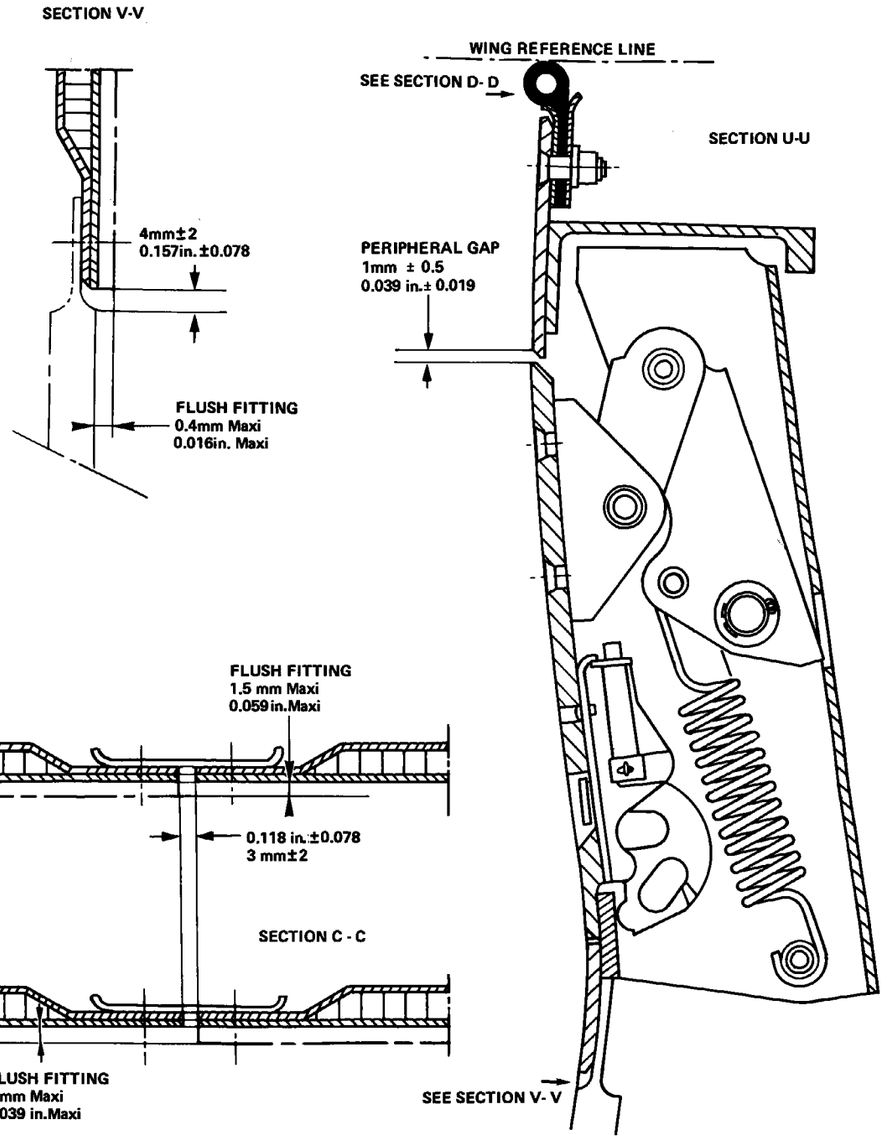




BM5 54 50 00 6 KRNO - 19

Peripheral Gaps and Flush Fitting of Center Fairing
Access Doors and Fairing Panels
Figure 605





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Peripheral Gaps and Flush Fitting of Center Fairing
Access Doors and Fairing Panels
Figure 606

R

EFFECTIVITY: 101-200,

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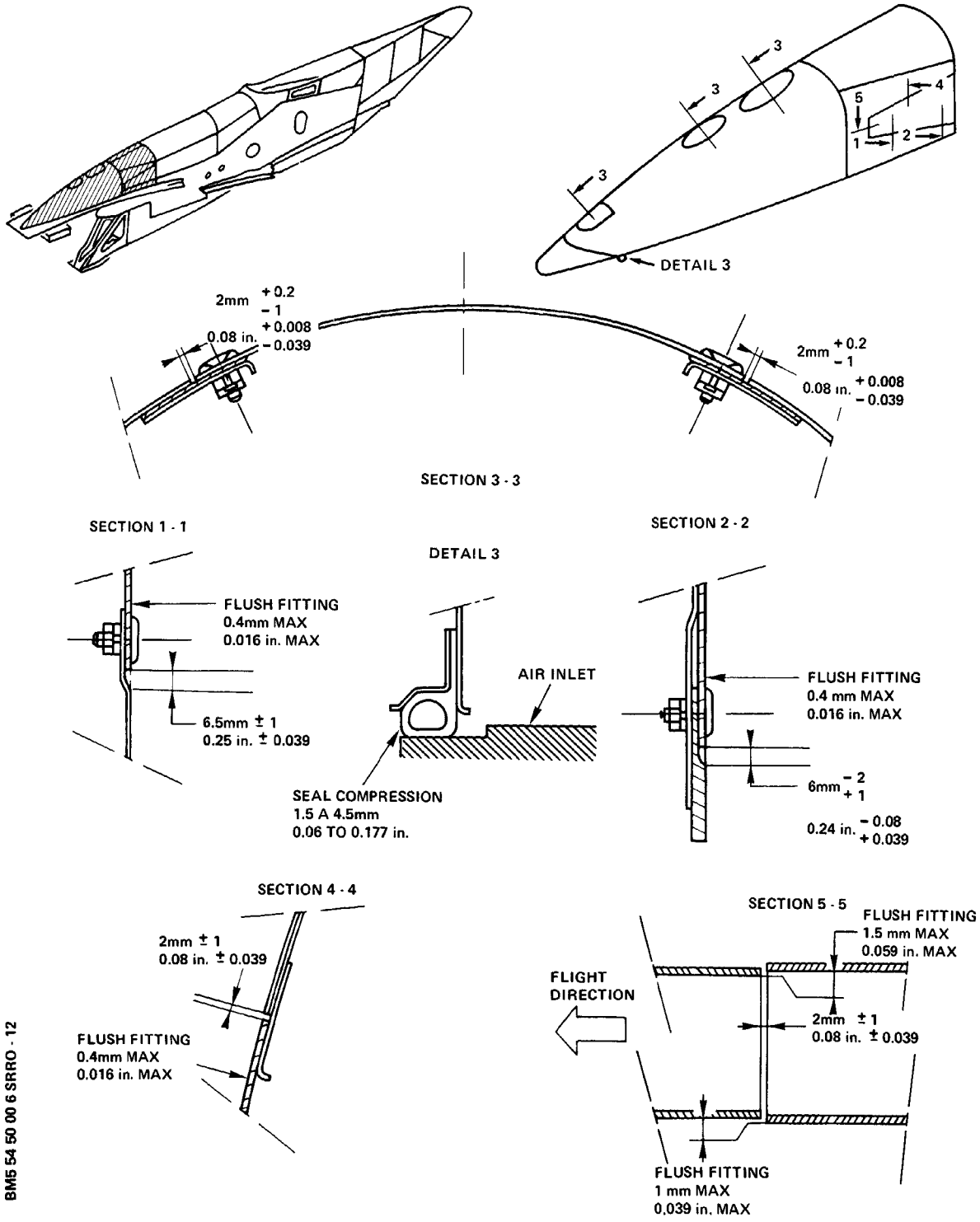

BM5 54 50 00 6 SRRO - 12

Peripheral Gaps and Flush Fitting of Forward Fairing - Access Doors and Fairing Panels
Figure 607

1. Engine Pylon Fairing Panels and Access Doors

NOTE : Those checks shall be carried out after replacement of engine pylon, with engine installed and after removal/installation of any removable fairing panels.

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform - 4 m. (13 ft. 1 in.)
(2)	Warning Notice

B. Procedure

(1)Job set-up

(a)Position access platform at engine pylon

(b)In flight compartment,

- on center pedestal, install a warning notice on flap and slat control lever to prevent it being operated.

(2)Inspection/check of fairing panels and access doors.

R (Ref. Fig. , , 603)

(Ref. Fig. , ,)

(a)Check that flush fitting and peripheral gaps of removable fairing panels are within tolerances.

(b)Check rubber seals for correct condition and check seal compression.

(c)Check main frame access door latching devices for correct condition.

(d)Check that no removable fairing panel attach screw is missing. Check that surface around attach holes is free from cracks.

(e)Check that access doors and fairing panels do not show evidence of distortion or scoring out of permissible limits.

(3)Close-up

(a)Remove engine pylon access platform.

(b)Remove warning notice from center pedestal in flight compartment.

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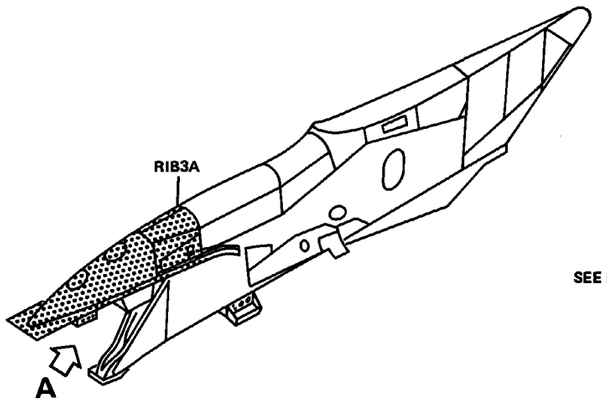

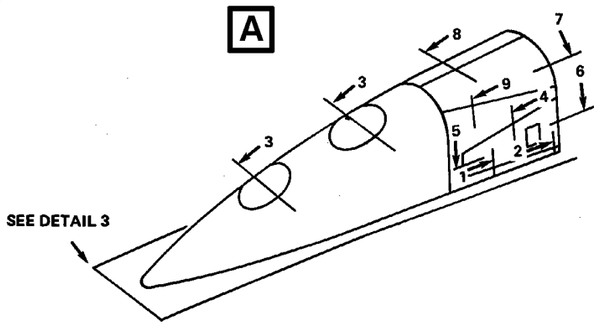

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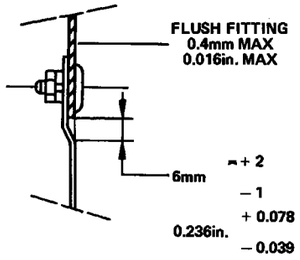

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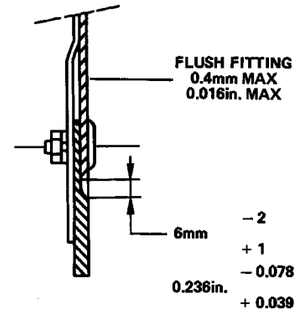

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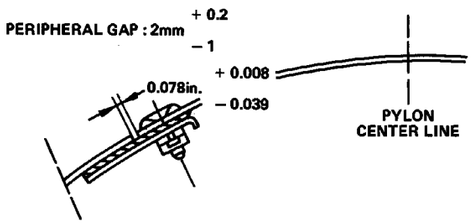

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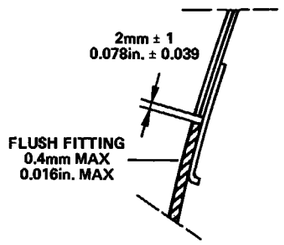

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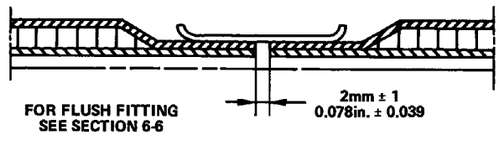

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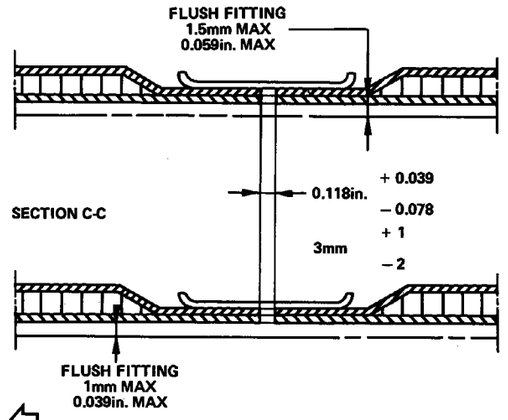

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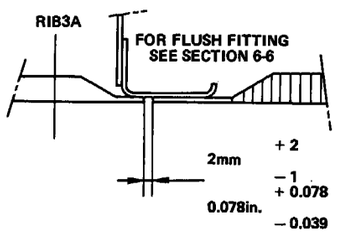

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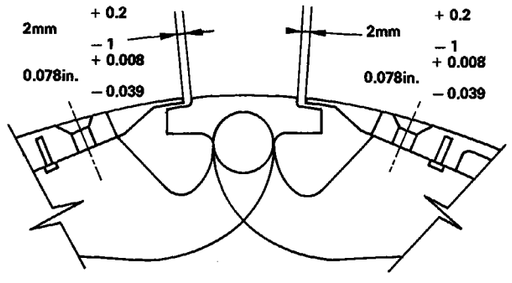

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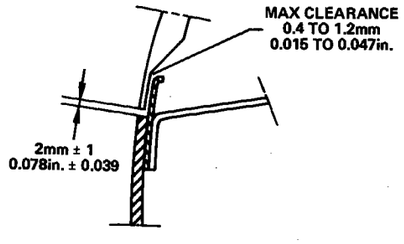
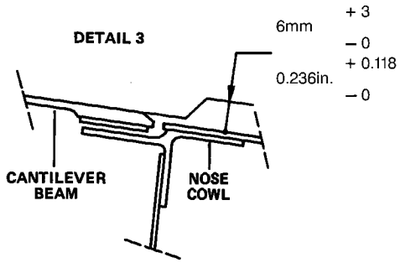


DETAIL 3



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Peripheral Gaps and Flush Fitting of Forward Fairing - Access Doors and Fairing Panels
Figure 601

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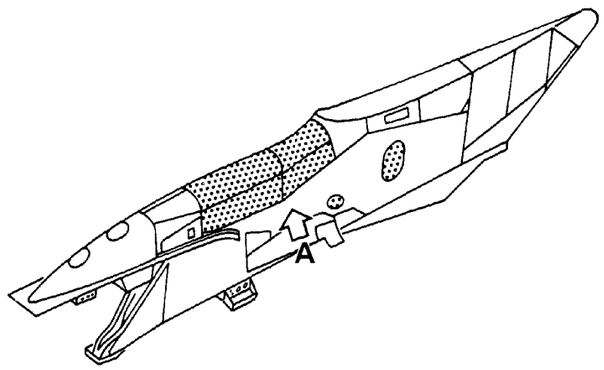
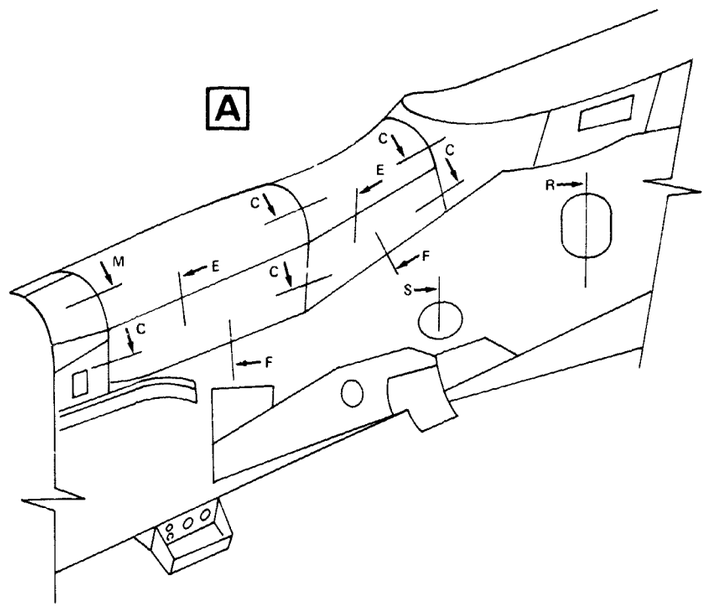
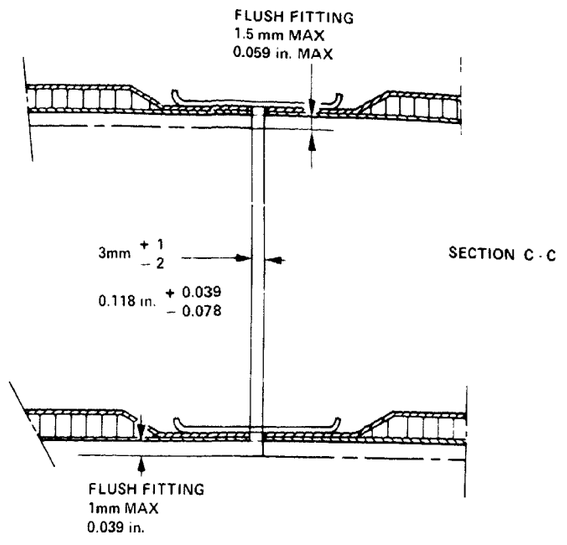
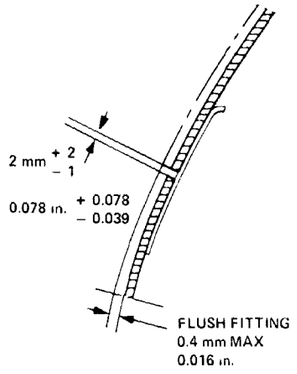






FLIGHT DIRECTION

SECTION E-E



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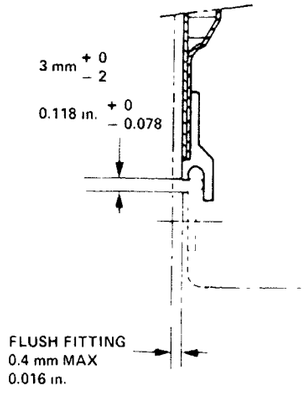

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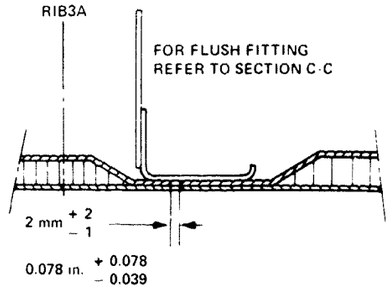

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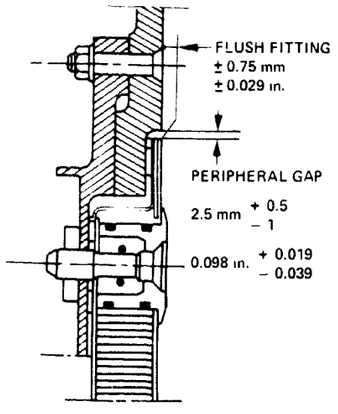

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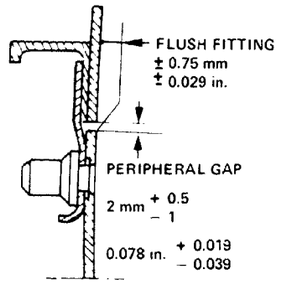

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Peripheral Gaps and Flush Fitting of Forward Fairing - Access Doors and Fairing Panels
Figure 602

EFFECTIVITY: 001-100,

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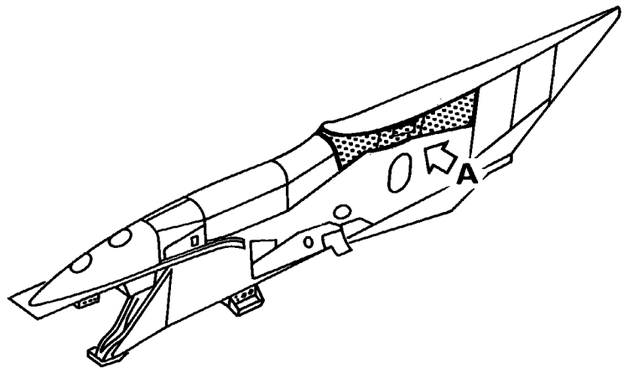

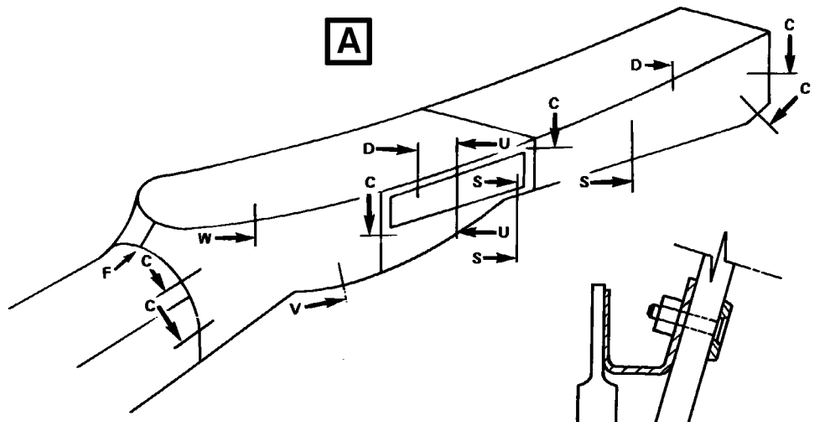

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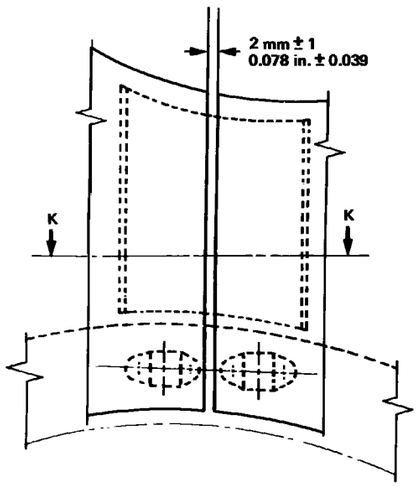

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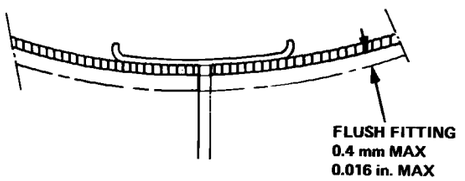

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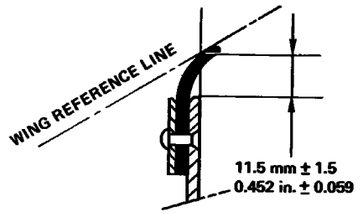

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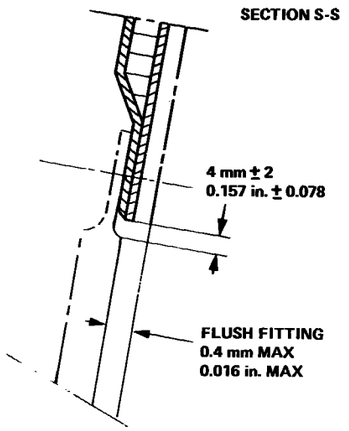

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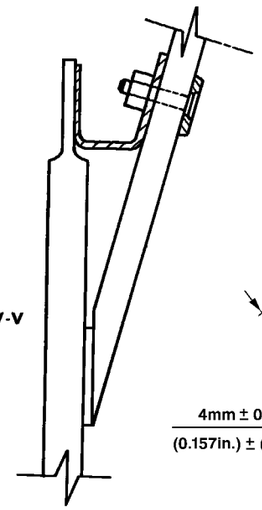

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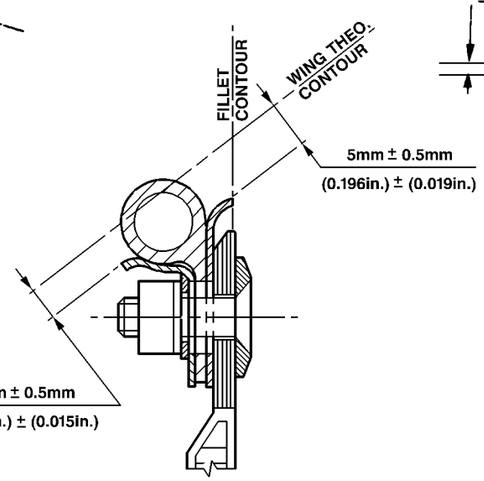

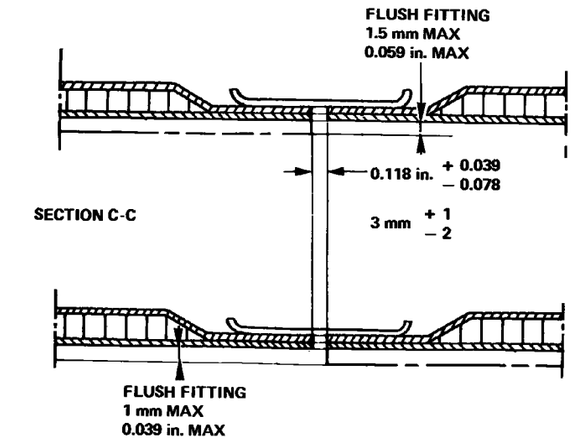

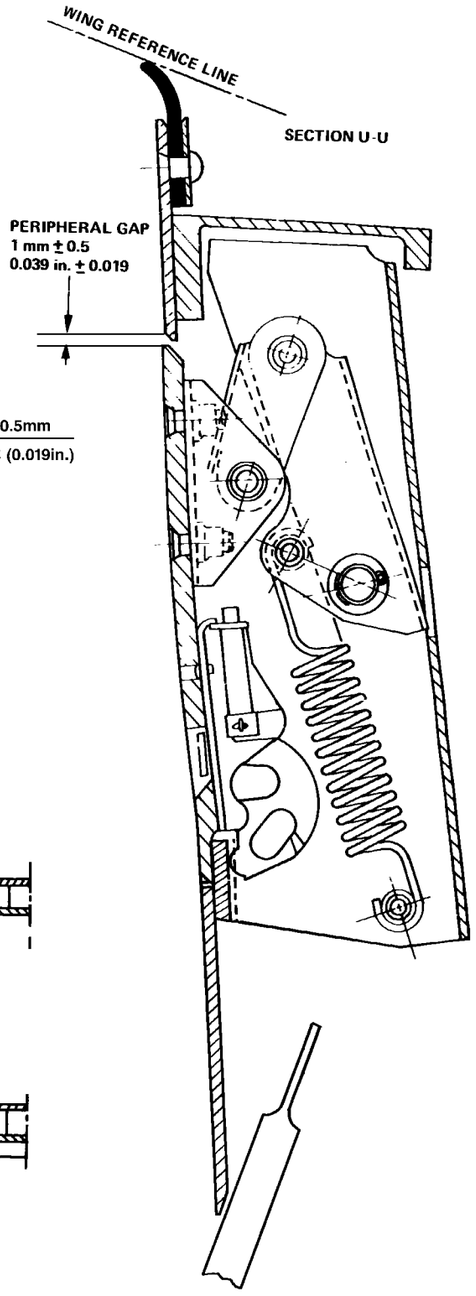

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Peripheral Gaps and Flush Fitting of Center Fairing - Access Doors and Fairing Panels
Figure 603

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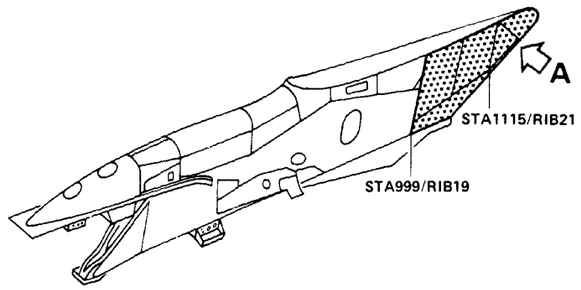

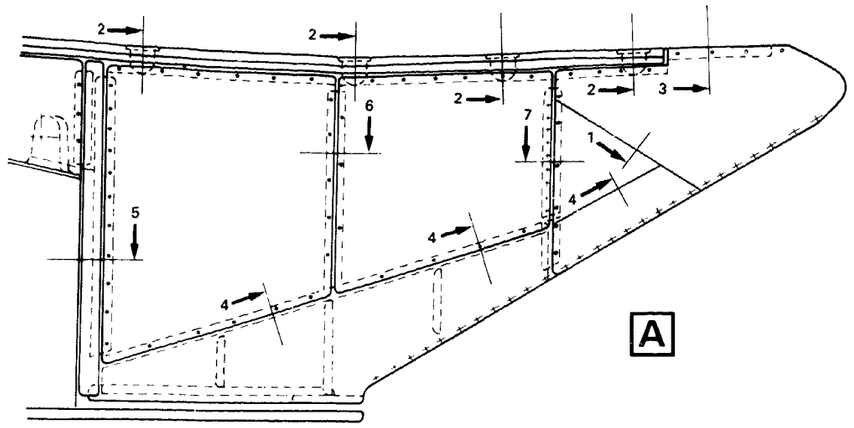

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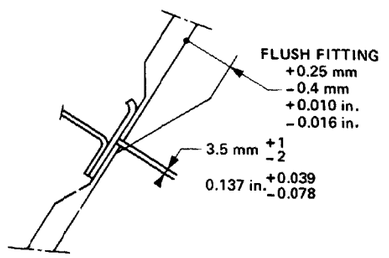

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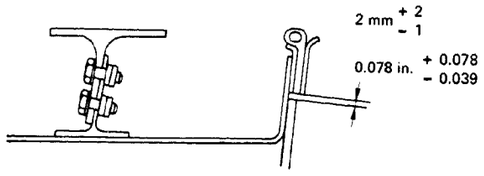

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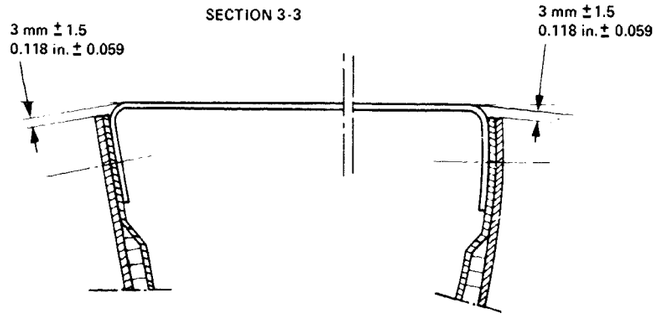

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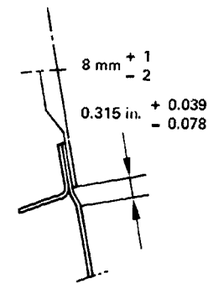

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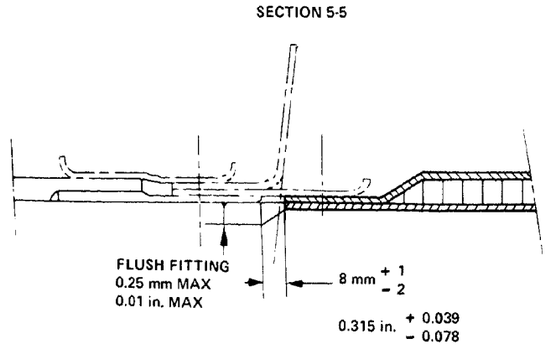

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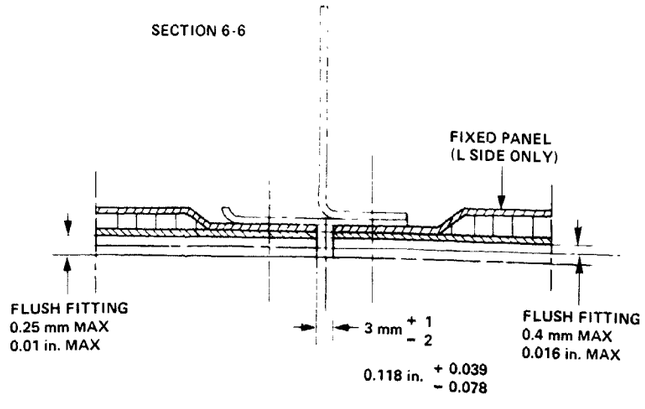

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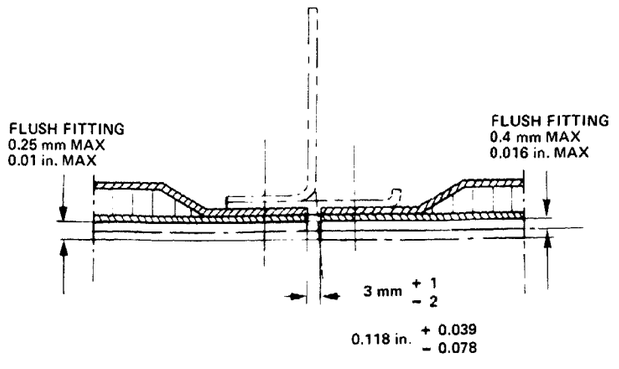

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Peripheral Gaps and Flush Fitting of Aft Fairing - Access Doors and Fairing panels
Figure 604

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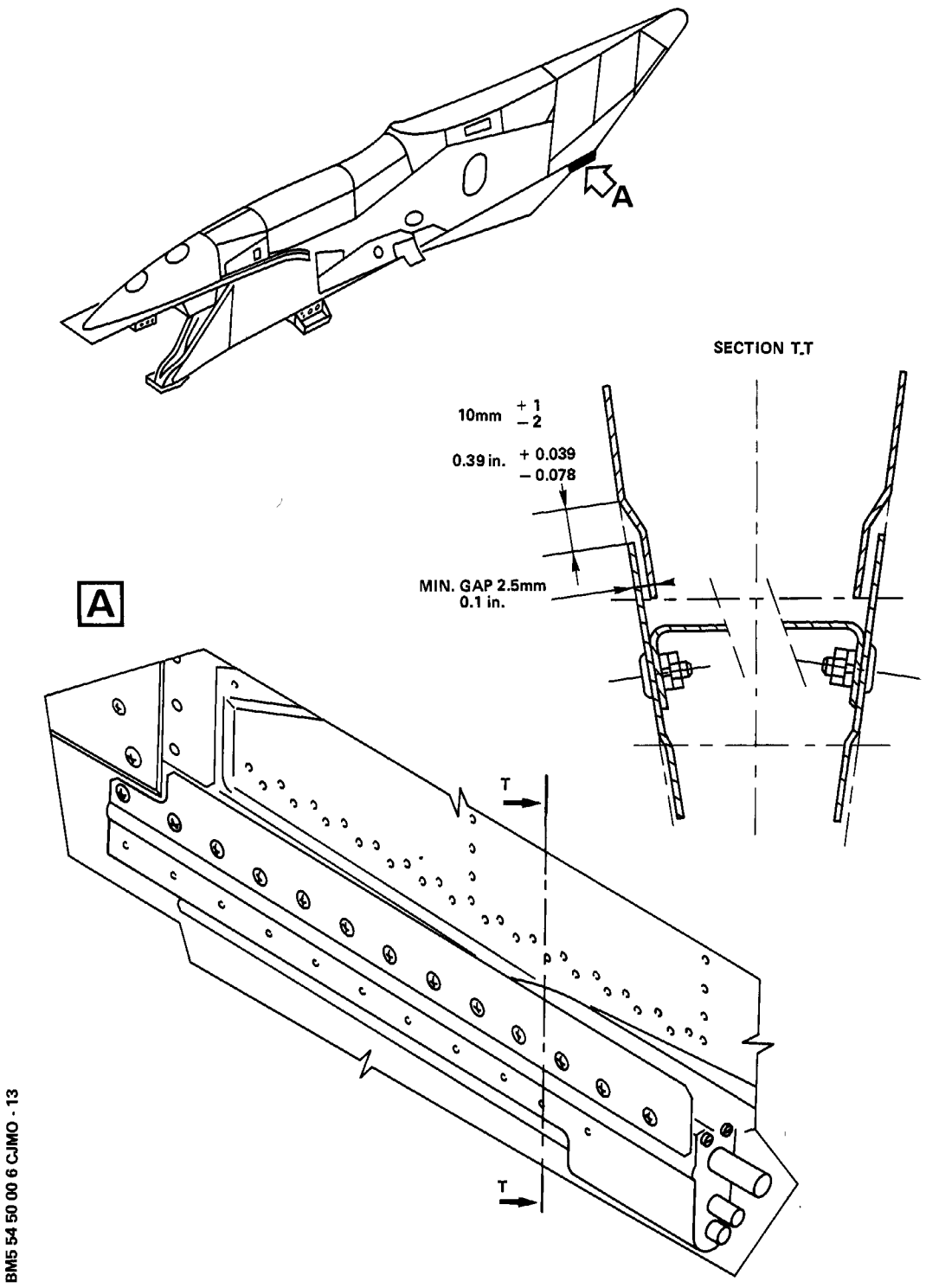

Peripheral Gaps and Flush Fitting of Aft Fairing Lower Section
Figure 605

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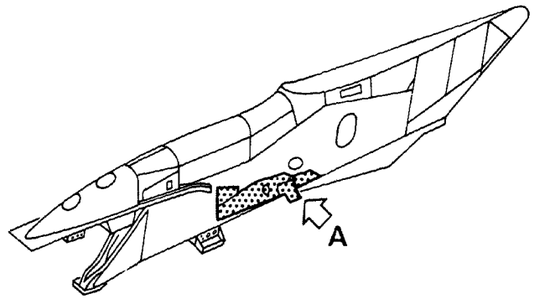

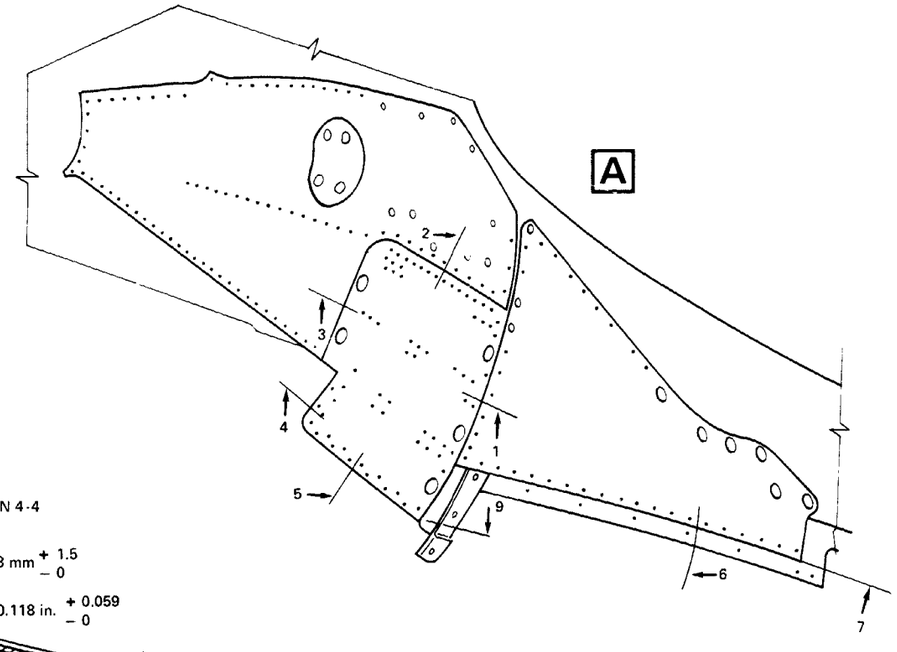

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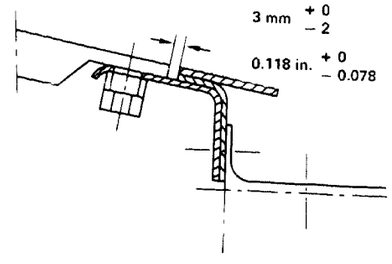

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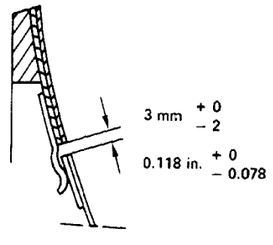

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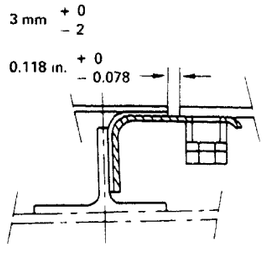

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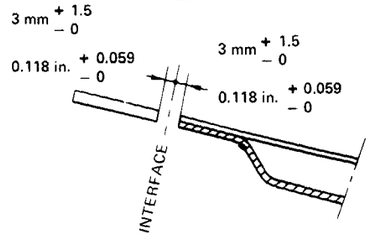

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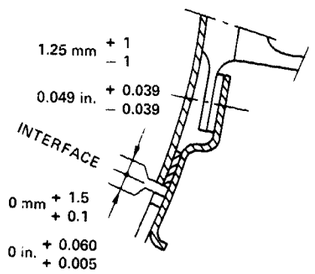

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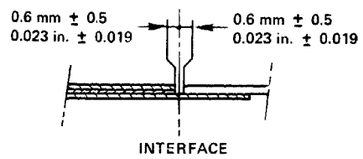

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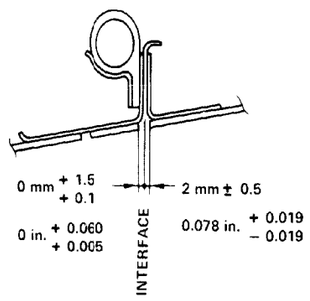

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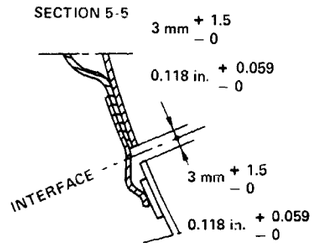

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Peripheral Gaps and Flush Fitting of Fairings Between Pylon Box and Engine Cowls
Figure 606

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MAIN FRAME - DESCRIPTION AND OPERATION

1. General

The main frame is the resistant structure which integrates the engine with the wing. It is built of high tensile strength material and it transmits engine longitudinal and lateral loads to the wing.

2. Description

A. Structure

The main frame consists of a fail-safe box type construction ; it is composed of main elements supporting loads and secondary elements reinforcing the box.

(1)Main elements

(Ref. Fig. 001)

They form the resistant frame to which are connected pylon-to-wing and pylon-to-engine attach fittings. The frame is made up of high tensile steel and comprises :

- four monobloc main ribs (RIB1, RIB8, RIB12 and RIB18)
- two upper spars (between RIB1 and RIB12)
- a lower cap
- four upper panels.

The four main ribs are connected in their lower section to a monobloc lower cap and in their upper section to two spars (between RIB1 and RIB12) and four upper panels.

Two panels cover the side faces of the frame and form the main frame box.

(2)Secondary elements

(Ref. Fig. 002)

The secondary elements include the secondary ribs and the access door frame.

(a)Secondary ribs

They are composed of four machined steel or folded sheet metal stiffeners.

Junctions of vertical and horizontal stiffeners of each rib are ensured by angles reinforcing rib.

Fourteen secondary ribs are distributed between the four main ribs in order to reinforce the main frame box.

The secondary ribs are attached to the spars, panels and lower cap in the same way as the main ribs.

(b)Access door frame

Access doors are equipped with a machined steel frame which reinforces the area and allows the doors to be secured by screws.

B. Equipment

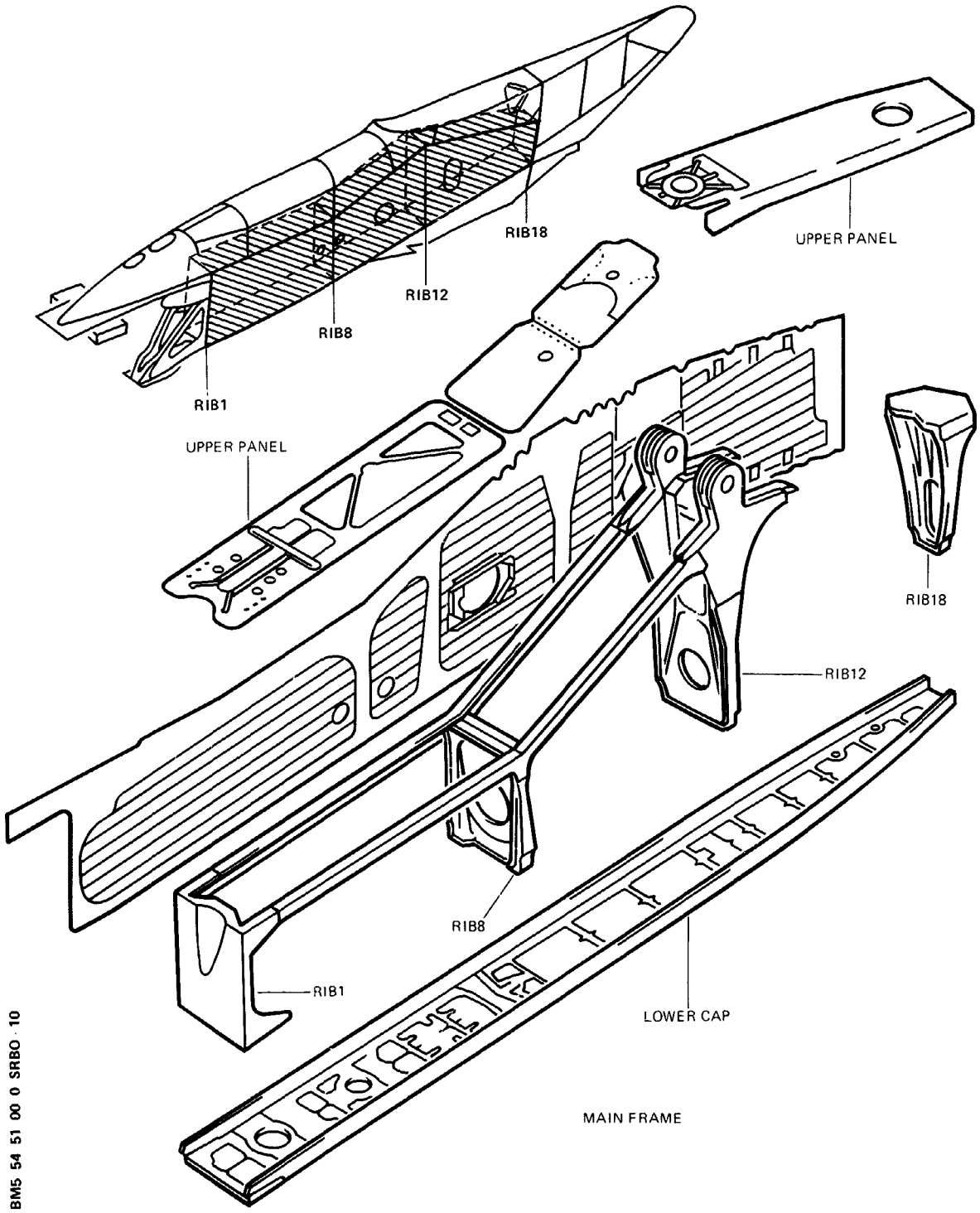
(1)Doors

(Ref. Fig. 003)

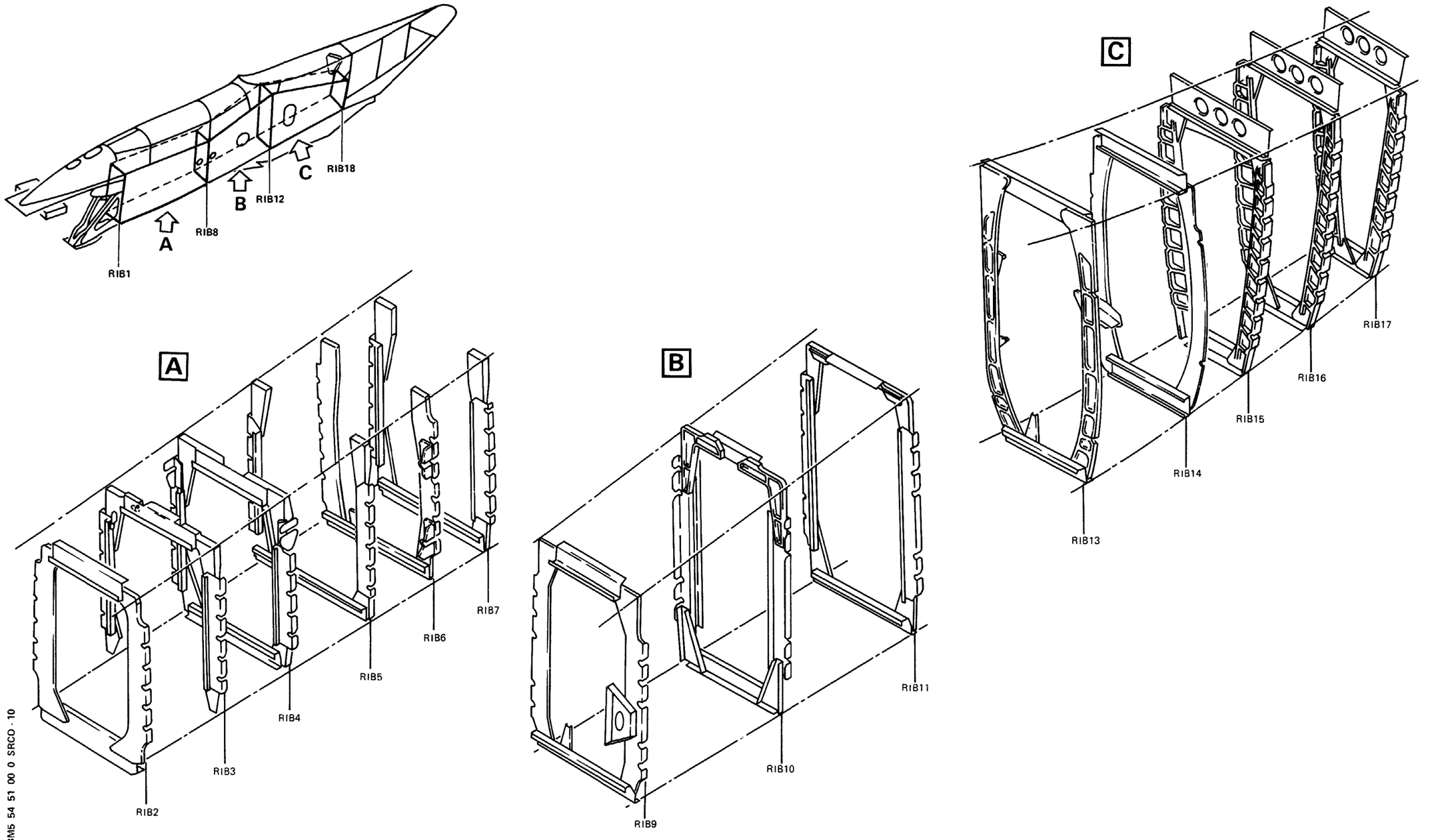
The main frame box is fitted with four doors giving access to the various systems.

(a)Forward access doors

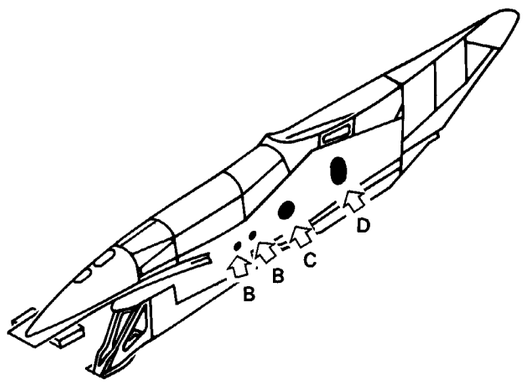
These doors are located on each side of the main frame box between RIB10 and RIB11.

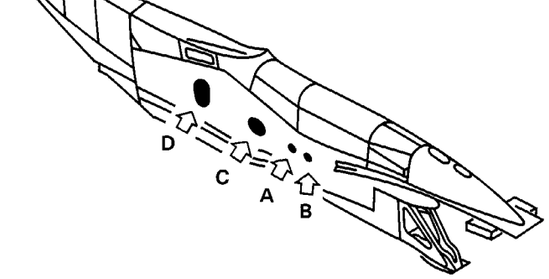


Main Elements
Figure 001



Secondary Elements
Figure 002





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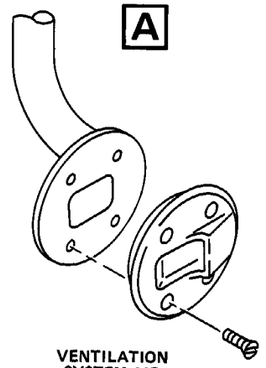
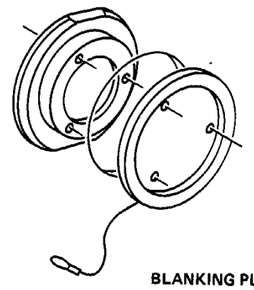


VENTILATION SYSTEM AIR INTAKE

B



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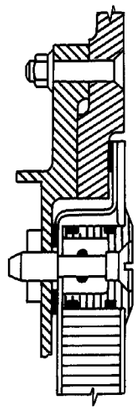

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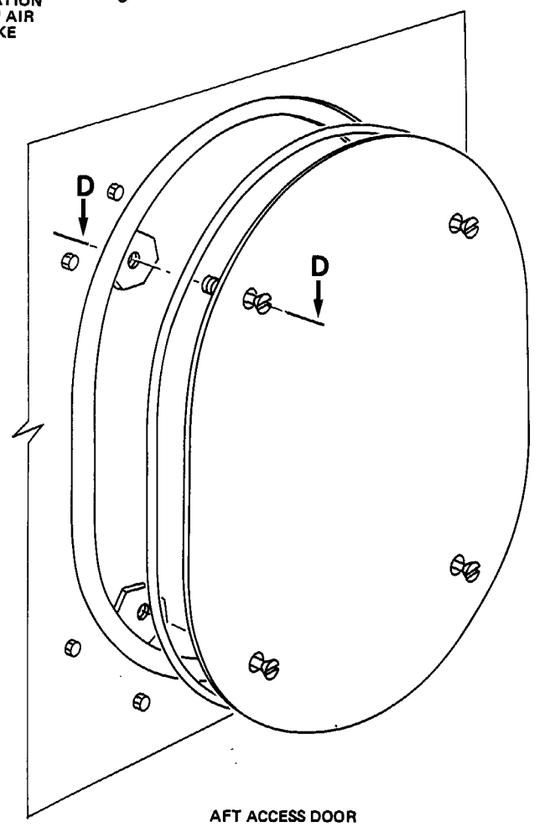
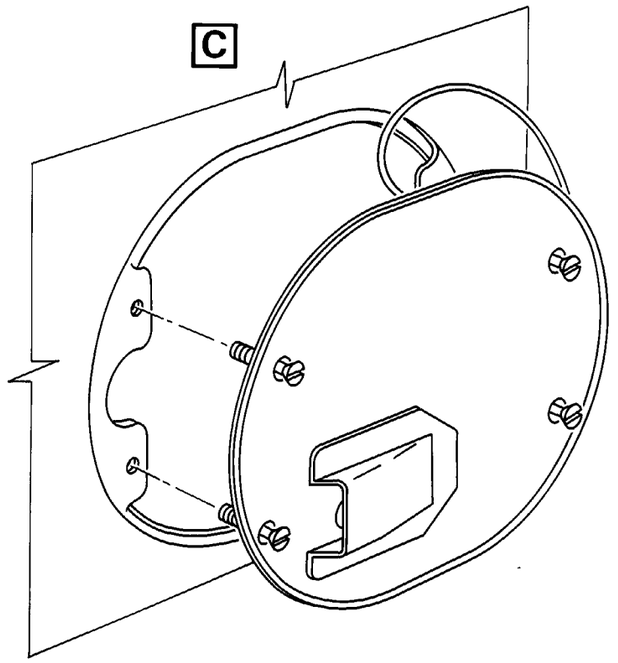


AFT ACCESS DOOR

C



FWD ACCESS DOOR

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Access Doors
Figure 003

The forward access doors are of light alloy and are attached to a frame secured on the side panels and RIB10 and RIB11 by means of four screws.
The door is linked to the frame by a steel retainer chain in order to prevent the access door from falling onto the engine cowls or to the ground, when opened.
The door located on the RH side of the box is equipped with a scoop which bleeds cooling air from compartment C.
These doors give access to the following systems :
- EPR pressure transmitters, associated lines and electrical wiring
- hydraulic pipes
- engine fire extinguishing system line.
- fuel system
- drain lines.

(b)Aft access doors
These doors are located on each side of the box between RIB13 and RIB14.
They are made of alloy metal sheets between which there is a honeycomb web.
The aft access doors are attached to the box by means of four screws and linked to the side panel by a steel retainer chain.
The doors provide access to the following systems :
- fire extinguisher bottles
- engine fire extinguishing system lines
- hydraulic pipes
- control wiring for fire extinguisher bottle percussion
- drain lines.

(2)Main attach fittings.
(a)Pylon-to-wing attach fittings
(Ref. Fig. 004)
The engine pylon is attached to the wing at three points located at RIB12 and RIB18 of the engine pylon main frame.
A spigot enables transfer of loads from engine pylon to wing.

1 Forward attach fittings
Forward attach fittings enable attachment of the pylon at two points to the front spar of the wing box.
Each pylon-to-wing junction is provided by two shackles which are connected in their upper section to an attach fitting secured on the wing and in their lower section to four yokes attached to the pylon main frame.
The yokes are grouped in pairs ; one pair is attached to L side of the box, the other to R side. The yokes of a single pair are attached to different main elements of the box. The outer yoke is linked to the side panel, upper spar, upper panels and RIB12. The inner yoke is linked to RIB12 and upper panels.
The fail-safe type junction between two yokes and two shackles is provided by a set of bolts. This set is composed of a large-diameter hollow bolt housing a smaller diameter bolt.
Each bolt in yoke is locked against rotaion by means of a special nut (Ref. Fig. 005)

2 Aft attach fitting
Aft attach fitting enables attachment of the pylon in one point to the

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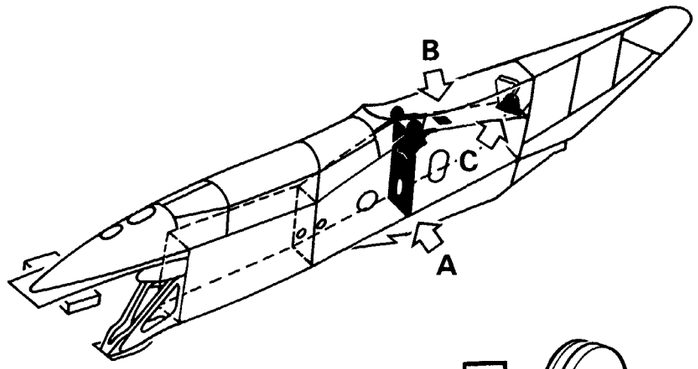

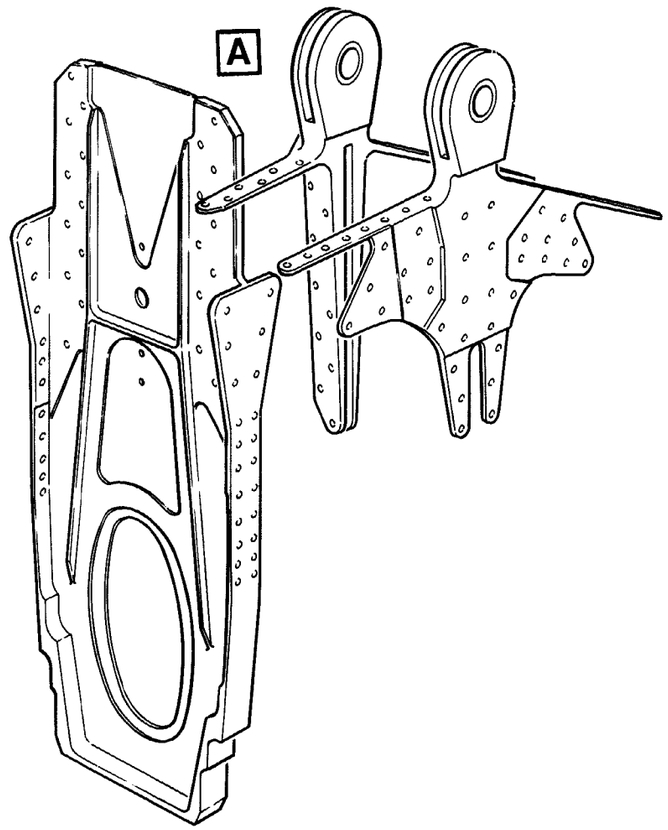

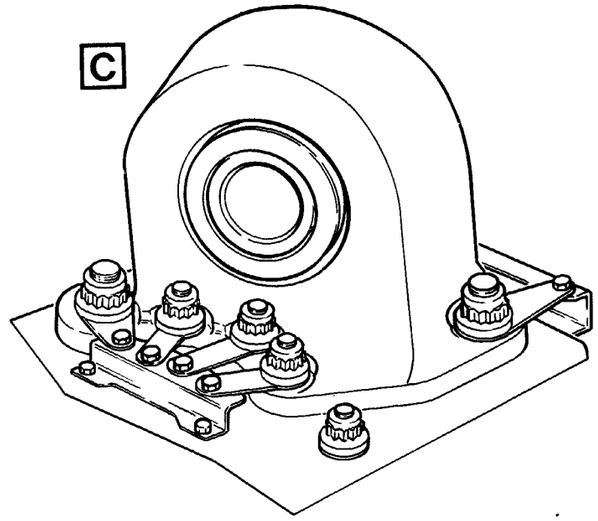

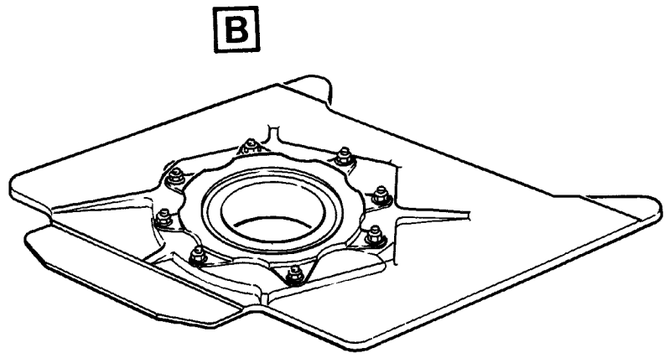

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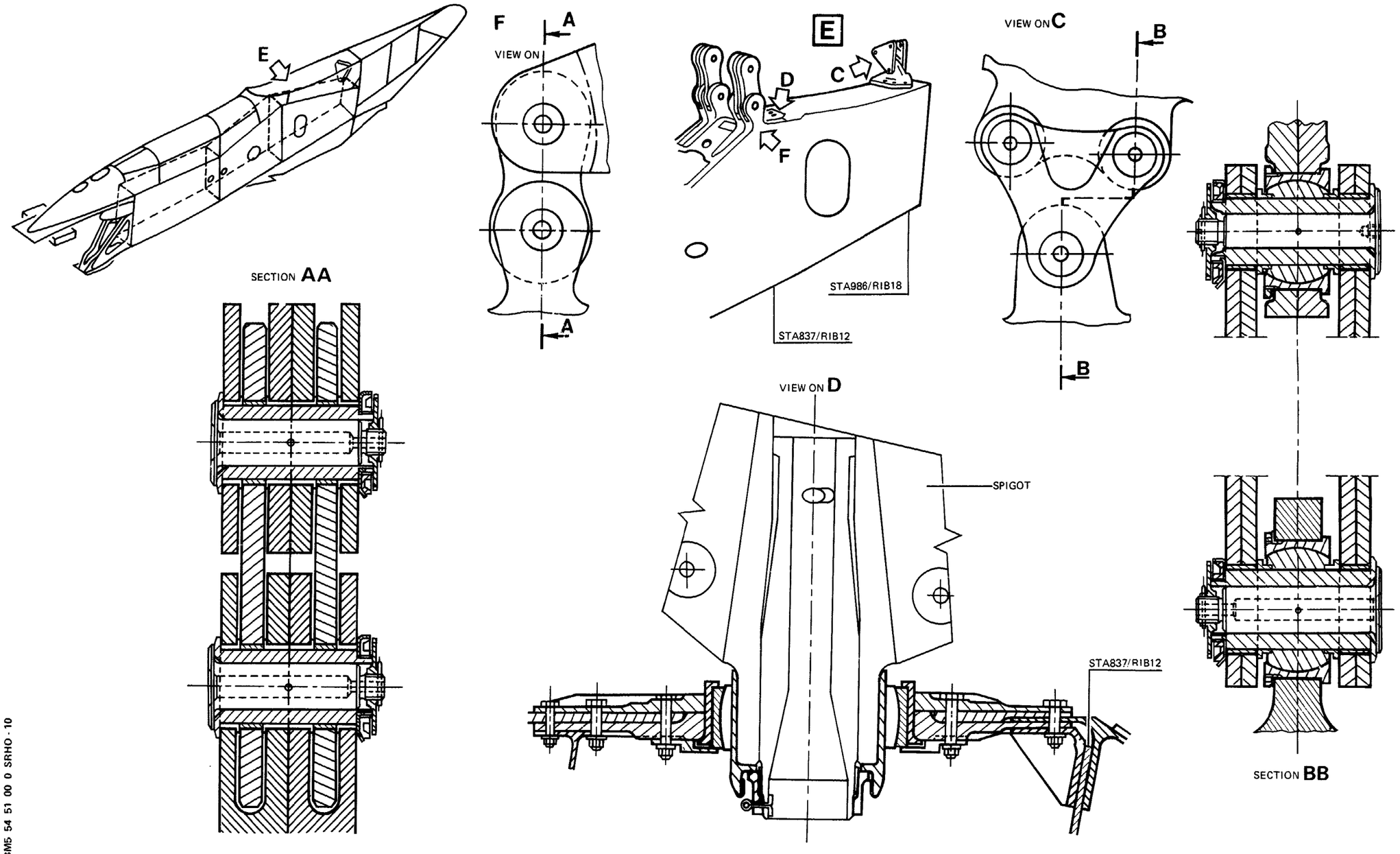
Pylon-to-Wing Attach Fittings
Figure 004



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Pylon-to-Wing Attach Fitting Assembly
Figure 005

rear spar of the wing box.
Pylon-to-wing junction is provided by two shackles which are connected in their upper section to an attach fitting secured on the wing and in their lower section to a plain bearing eye fitting bolted on RIB18.
The eye fitting is removable and according to the assembly, in R or L pylon configuration. Eye-fitting-to shackles fail safe type junction is provided by a set of bolts identical to those used for forward attach fitting
(Ref. Fig. 005)

3 Spigot fitting
The upper panel between RIB12 and RIB13 is equipped with a ball-joint attach fitting in which engages the spigot secured to the wing lower surface. This assembly enables lateral load transfer between pylon and wing.

(b)Pylon-to-engine attach fittings
(Ref. Fig. 006)
The engine is attached to the pylon in two points by two attach fittings.

1 Forward attach fitting
Forward attach fitting enables attachment of the engine at one point located at the intermediate case aft flange.
Forward attach fitting is attached to a plate integral with the engine. This plate is provided with a locating pin which engages in forward attach fitting.
Forward attach fitting is composed of two side attach fittings attached to RIB1 and joined together on engine side by a pyramid attach fitting which houses the locating pin.

2 Aft attach fitting
Aft attach fitting enables attachment of the engine at one point by means of an attach fitting attached under RIB8 of main frame. Aft attach fitting is composed of two machined steel symmetrical crossbeams which are attached under RIB8 by means of four bolts.
Aft attach fitting is fitted with two locating pins which facilitate engine installation under pylon.
Aft attach fitting is attached to a support integral with the engine turbine exhaust case forward flange.

(3)Auxiliary fittings
(Ref. Fig. 007)

(a)Pylon main frame is equipped with various fittings which enable attachment of pylon-to-engine interface equipment :

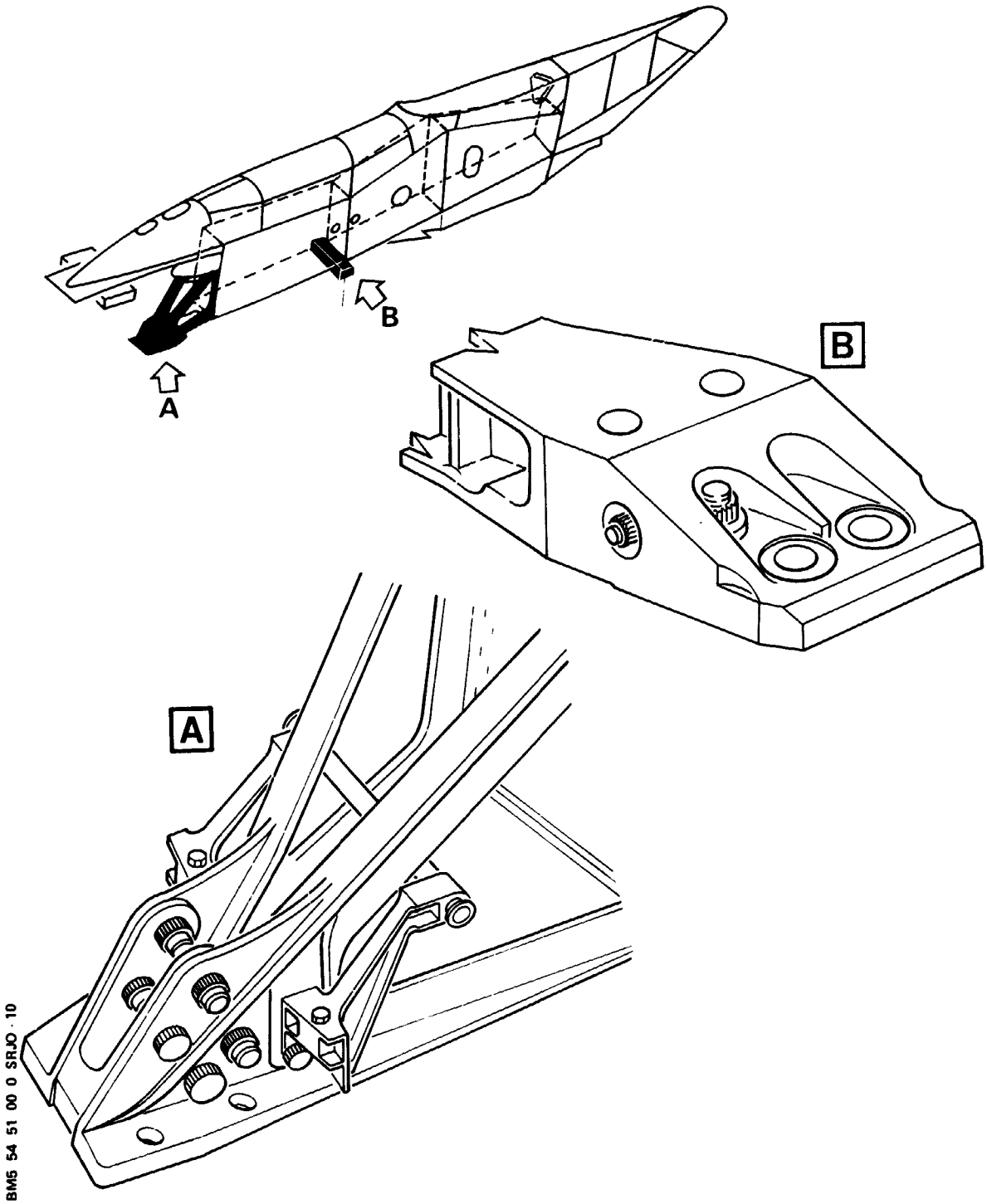
1 Thurst reverser door opening actuator fitting at RIB1.

2 Fan thrust reverser cowl attach fitting at RIB2.

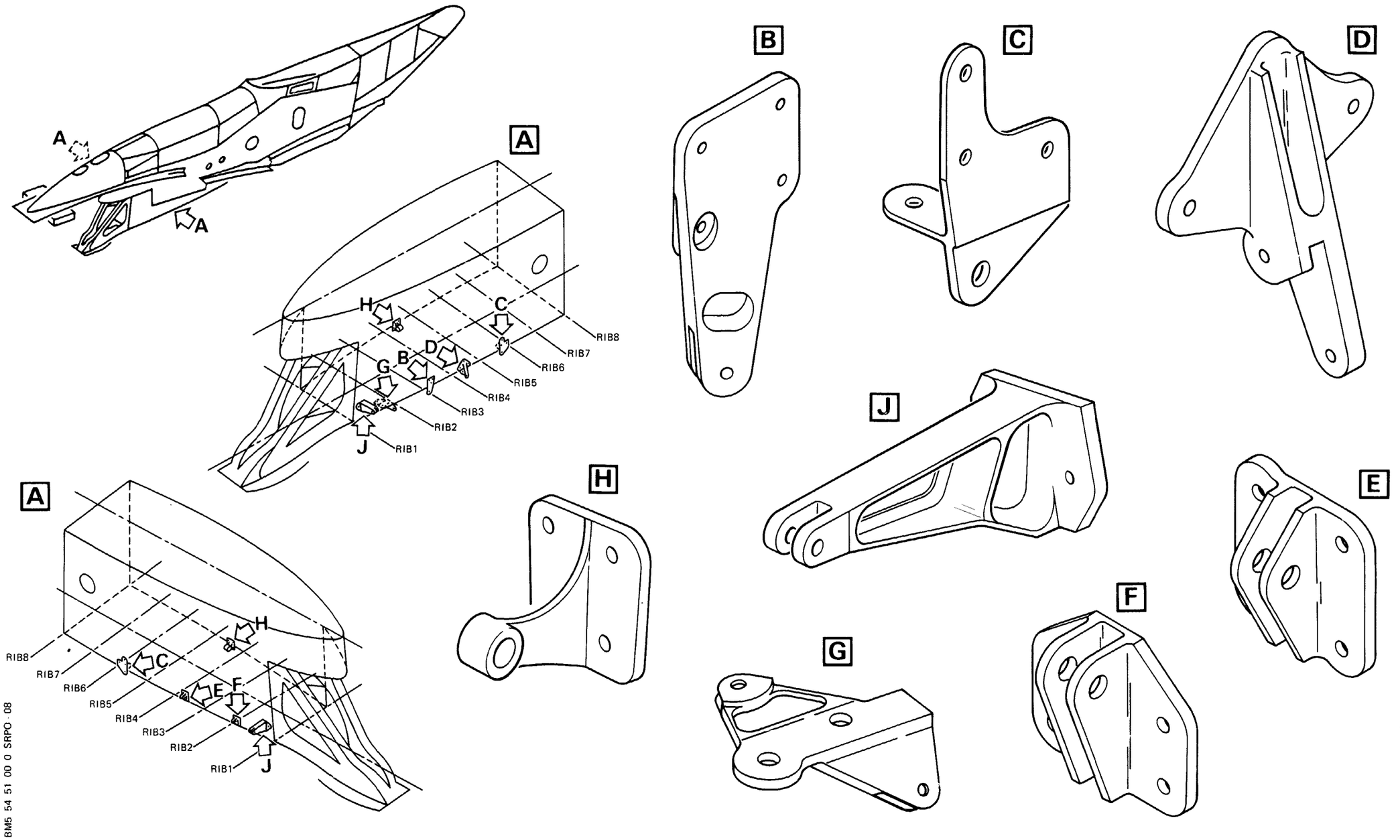
3 Precooler cold air inlet duct attach fittings between RIB1 and RIB2 and RIB4 and RIB5 on pylon L side only.
Duct is secured by two adjustable rods which are connected to these fittings.

4 Heat shield and hydraulic and fuel junction base plate attach fittings between RIB1 and RIB2 and RIB4 and RIB5.

5 Engine hoist fittings at RIB6.
The side panels between RIB1 and RIB10 are provided with metallic edges which ensure aerodynamic continuity with fan thrust reverser



Engine-to-Pylon Attach Fittings
Figure 006



Auxiliary Fittings
Figure 007

cowls.

(4)Fire protection

Fire protection is provided for by insulating the hot zone of the engine from pylon main frame.

This insulation is ensured by fire walls installed as follows :

- a horizontal fire wall provided with a seal is attached to each side panel of main frame between **RIB1** and **RIB5. Detail D**

(Ref. Fig. 008)

This fire wall comes into contact with fan thrust reverser cowls when they are closed

- a transverse fire wall attached under **RIB9** rests on the engine.

(Ref. Fig. 009)

The hydraulic junction base plate is separated from engine compressor by a heat shield equipped with fire detection components.

(Ref. Fig. 008) Details B, C

(5)Hydraulic and fuel junction base plate **(Ref. Fig. 008). Detail C**

The main frame is provided with a hydraulic junction base plate under the lower cap between **RIB1** and **RIB7.**

Any fluid due to leakage is discharged overboard by means of the hydraulic and fuel junction base plate which also ensures line insulation and junction with engine pipes.

(6)Fire extinguishing system

The main frame under the lower cap between **RIB1** and **RIB2** is equipped with an extinguishing agent nozzle connected to the fire extinguisher bottles by a pipe.

This nozzle distributes extinguishing agent into the nacelles when the fire extinguisher bottles are discharged.

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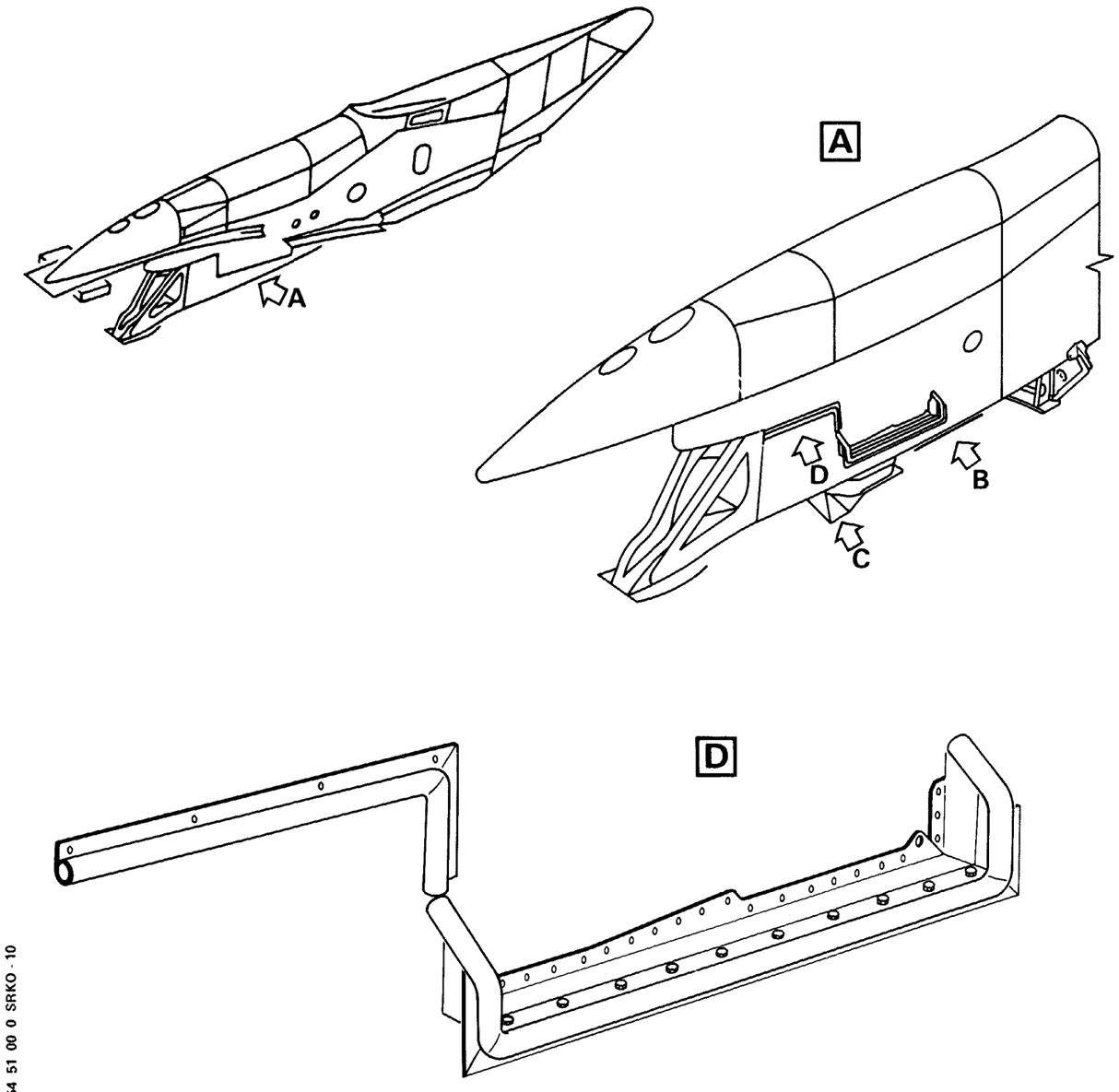

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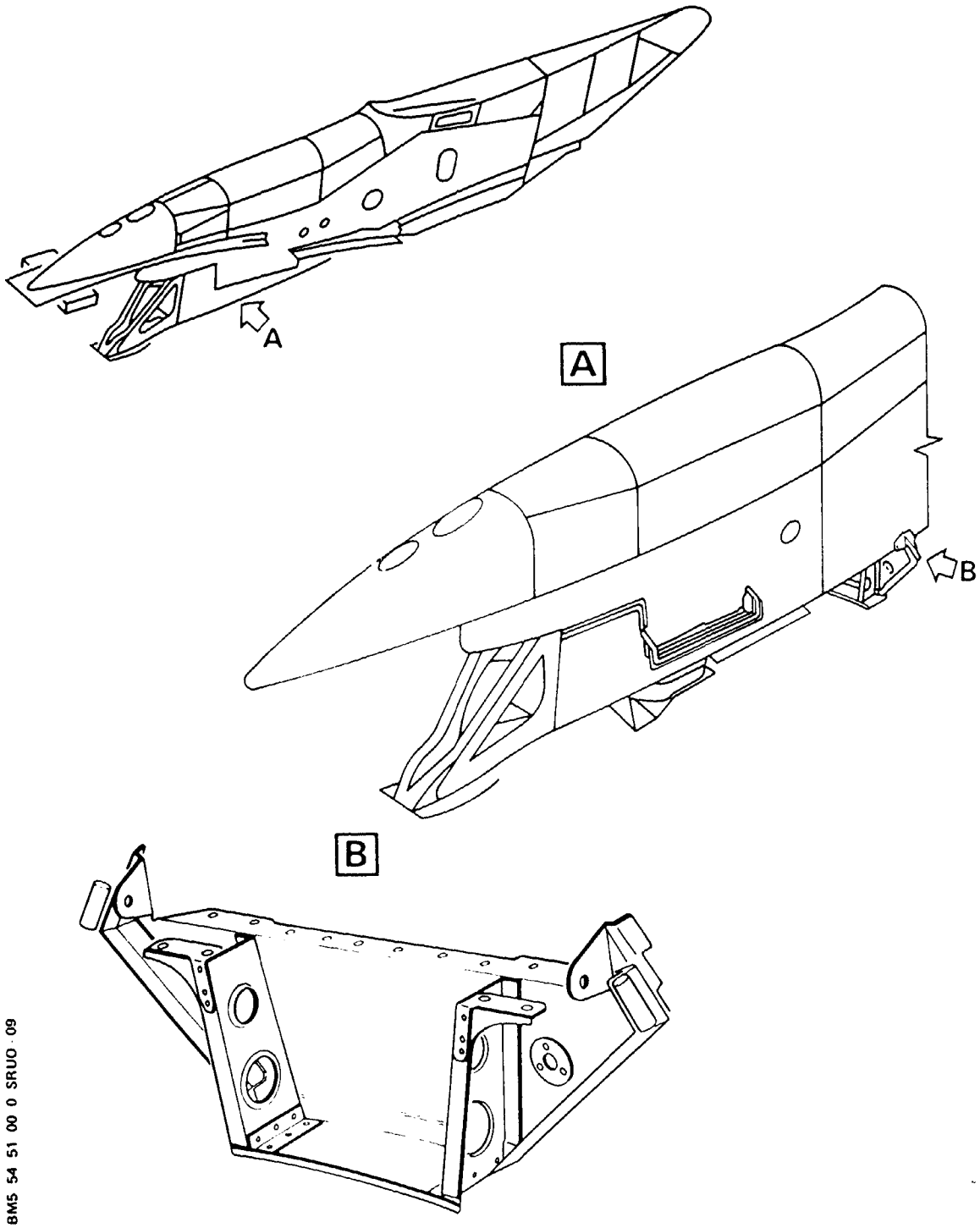
Fire Protection Components
Figure 008



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Fire Wall at RIB9
Figure 009

PYLON BOX - DESCRIPTION AND OPERATION

1. General

The pylon box is the resistant structure which integrates the engine with the wing. It is built of high tensile strength material and transmits engine longitudinal and lateral loads to the wing.

2. Description

A. Structure

The pylon box consists of a fail-safe box type construction; it is composed of main elements supporting loads and secondary elements reinforcing the box.

(1)Main elements

(Ref. Fig. 001)

They form the resistant frame to which are connected pylon-to-wing and pylon-to-engine attach fittings. The frame is made up of high tensile steel and comprises :

- five monobloc main ribs (RIB1, RIB8B, RIB9C, RIB12 and RIB18)
- two upper spars (between RIB1 and RIB12)
- a lower cap
- four upper panels.

The five main ribs are connected in their lower section to a monobloc lower cap and in their upper section to two spars (between RIB1 and RIB12) and four upper panels.

Two panels cover the side faces of the frame and form the pylon box.

(2)Secondary elements

(Ref. Fig. 002, 003, 004)

The secondary elements include the secondary ribs and the access door frame.

(a)Secondary ribs

They are composed of four machined steel or folded sheet metal stiffeners.

Junctions of vertical and horizontal stiffeners of each rib are ensured by angles reinforcing rib.

Fourteen secondary ribs are distributed between the five main ribs in order to reinforce the pylon box.

The secondary ribs are attached to the spars, panels and lower cap in the same way as the main ribs.

(b)Access door frame

Access doors are equipped with a machined steel frame which reinforces the area and allows the doors to be secured by screws.

B. Equipment

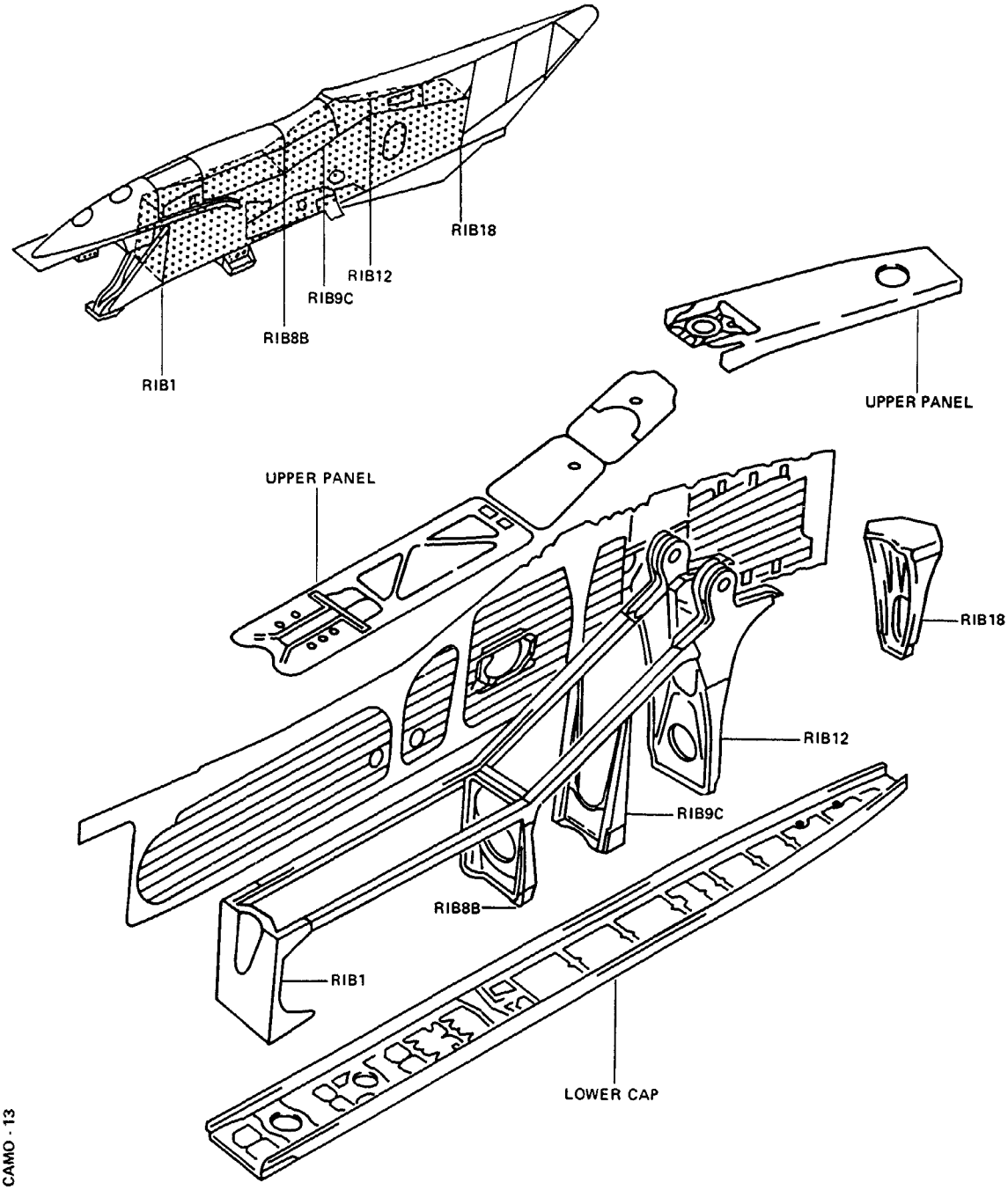
(1)Doors

(Ref. Fig. 005)

The pylon box is fitted with six doors giving access to the various systems.

The three pylon inboard access doors are identical to the three outboard ones.

(a)Forward access doors



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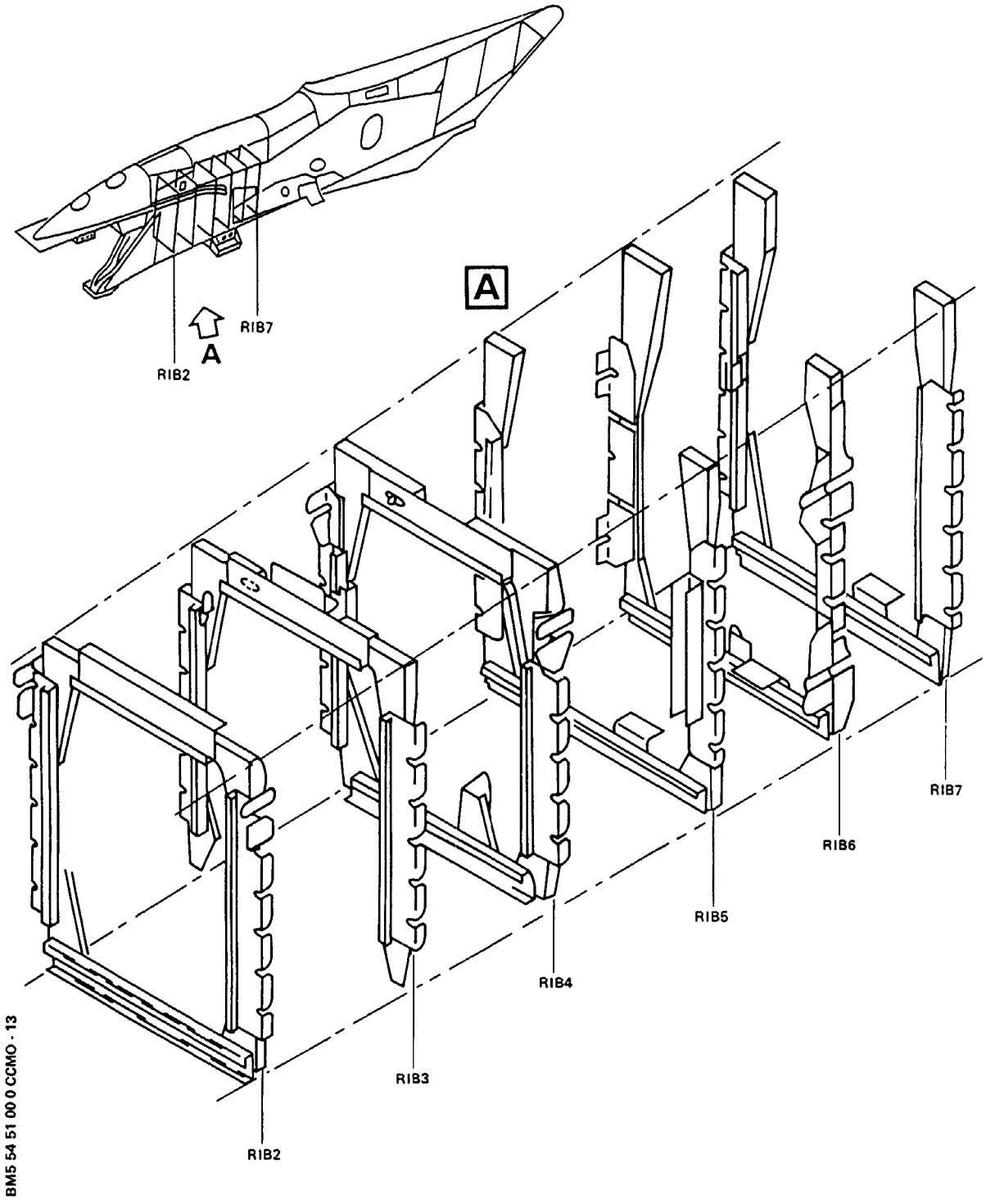
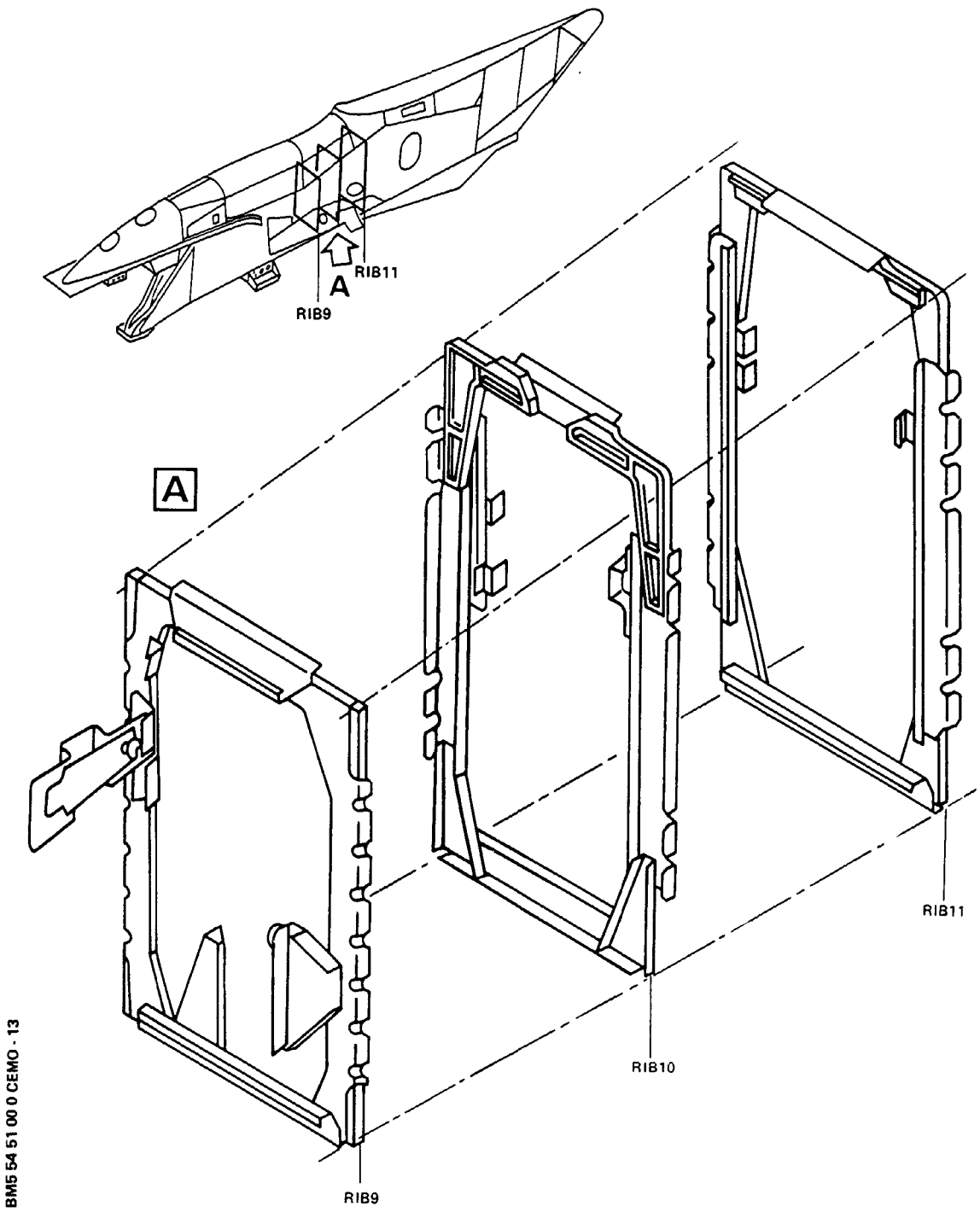
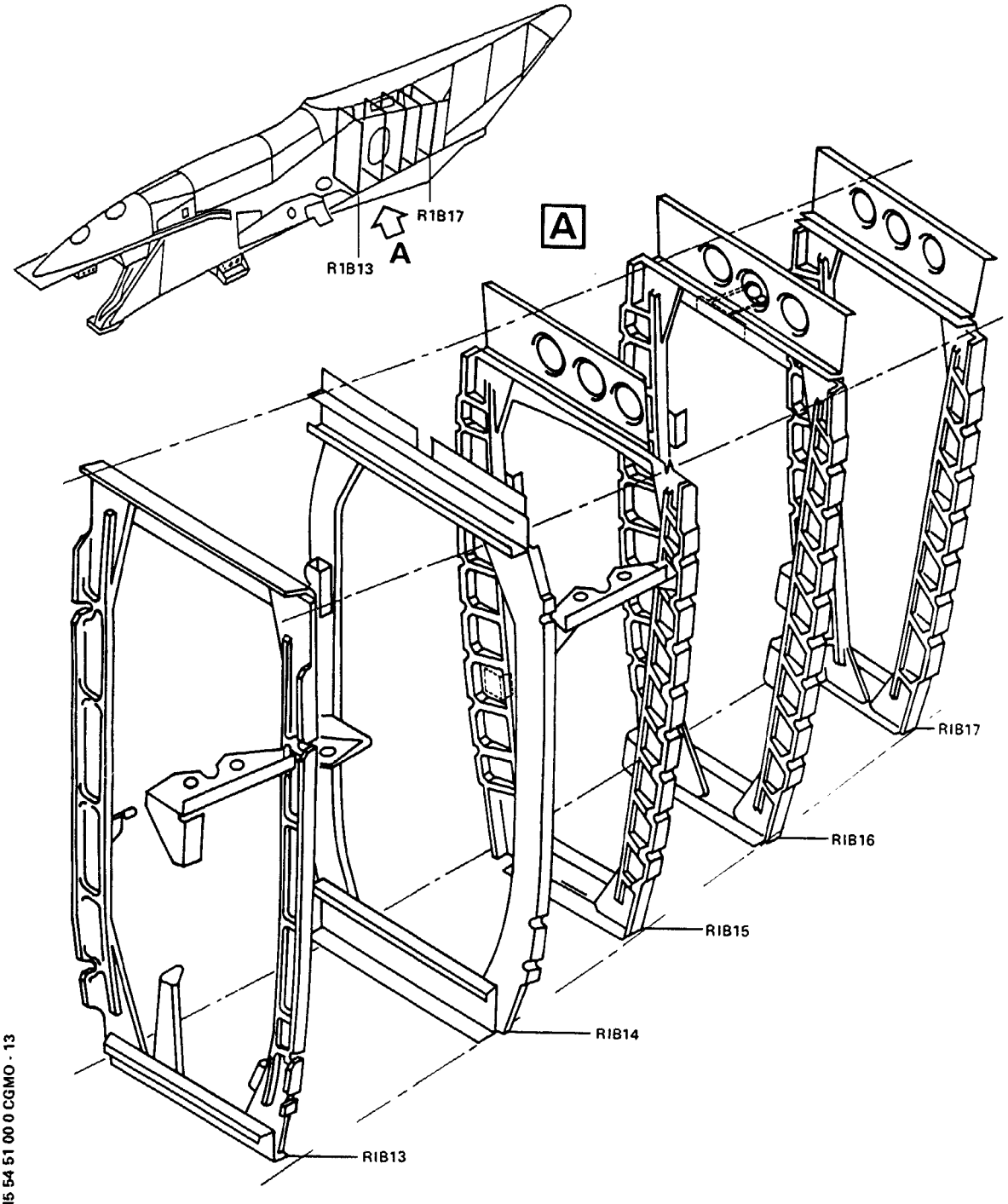
Main Elements
Figure 001



Secondary Elements - Forward
Figure 002



Secondary Elements - Center
Figure 003



Secondary Elements - Aft
Figure 004

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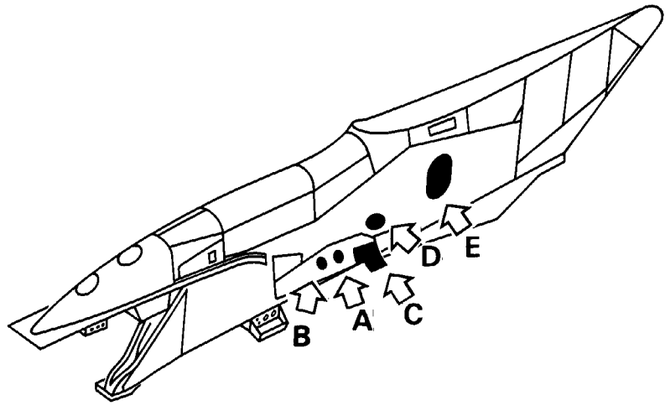
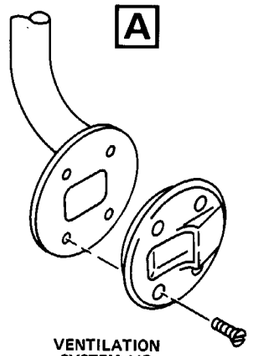
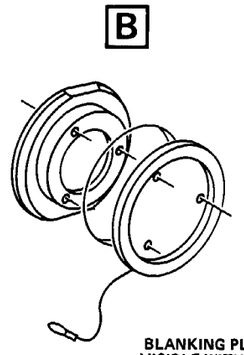




VENTILATION SYSTEM AIR INTAKE



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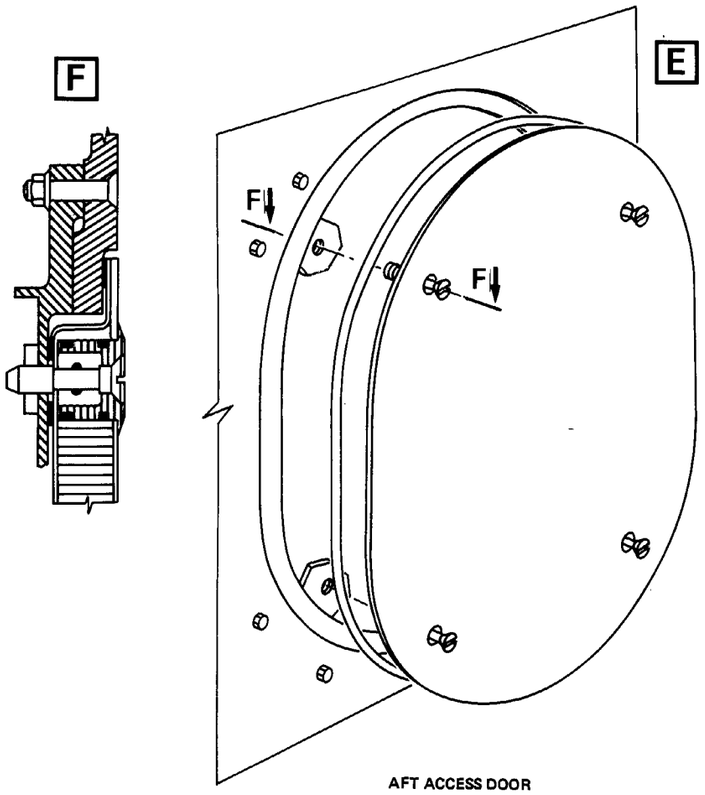
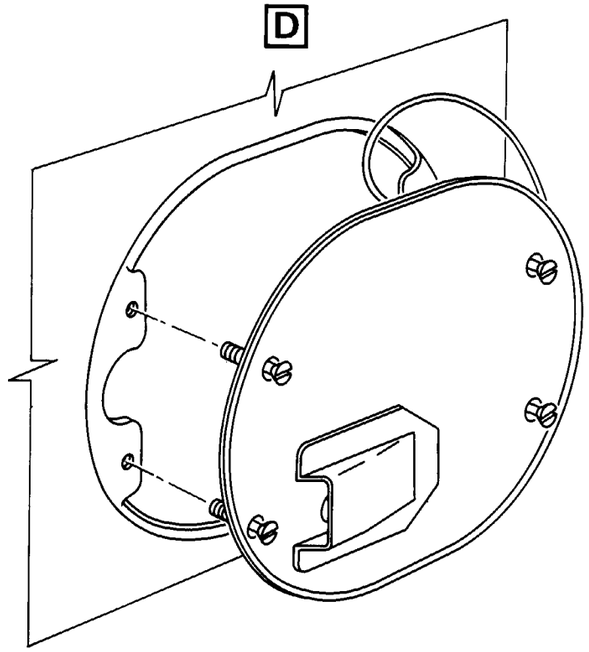
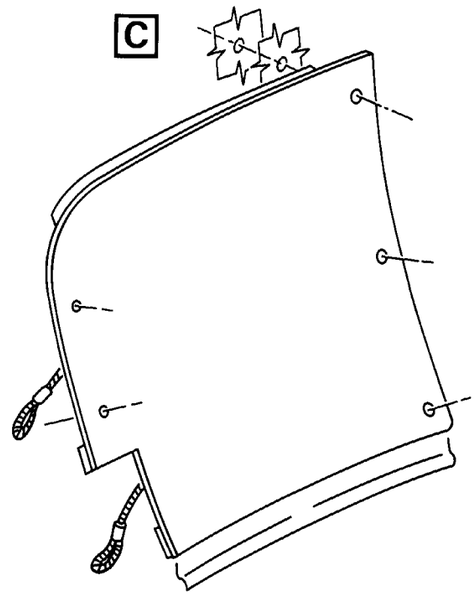


AFT ACCESS DOOR



FWD ACCESS DOOR



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Outboard Access Doors
Figure 005

These doors are located on each side of the pylon box between RIB10 and RIB11.
The forward access doors are made of light alloy and are attached to a frame secured on the side panels and RIB10 and RIB11 by means of four screws. The door is linked to the frame by a steel retainer chain in order to prevent the access door from falling onto the engine cowls or to the ground, when opened.
The door located on the R side of the box is equipped with a scoop which bleeds cooling air from compartment C.
These doors give access to the following components :
- pressure transmitters associated lines
- lines in compartment A
- attach bolts of the engine aft mount upper beam
- primary transmission crank lever
- hydraulic pipes
- engine fire extinguishing system line.

(b)Aft access doors
These doors are located on each side of the box between RIB13 and RIB14.
They are made of alloy metal sheets between which there is a honeycomb web.
The aft access doors are attached to the box by means of four screws and linked to the side panel by a steel retainer chain.
The doors provide access to the following components :
- fire extinguisher bottles
- engine fire extinguishing system lines
- hydraulic pipes
- control wiring for fire extinguisher bottle percussion
- bolts attaching pylon-to-wing aft mount to RIB18.

(c)Access doors at pylon-to-core cowl junction
These doors are located between RIBs 9 and 10, at pylon-to-core cowl junction and are made of high alloy. They give access to pylon-to-wing interface and mainly to engine aft mount.

(2)Main attach fittings

(a)Pylon-to-wing attach fittings
(Ref. Fig. 006)
The engine pylon is attached to the wing in three points located at RIB12 and RIB18 of the engine pylon main frame.
A spigot enables transfer of loads from engine pylon to wing.

1 Forward attach fittings
Forward attach fittings enable attachment of the pylon in two points to the front spar of the wing box.
Each pylon-to-wing junction is provided by two shackles which are connected in their upper section to an attach fitting secured on the wing and in their lower section to four yokes attached to the pylon box.
The yokes are grouped in pairs; one pair is attached to L side of the box, the other to R side. The yokes of a single pair are attached to different main elements of the box. The outer yoke is linked to the side panel, upper spar, upper panels and RIB12. The inner yoke is linked to RIB12 and upper panels.

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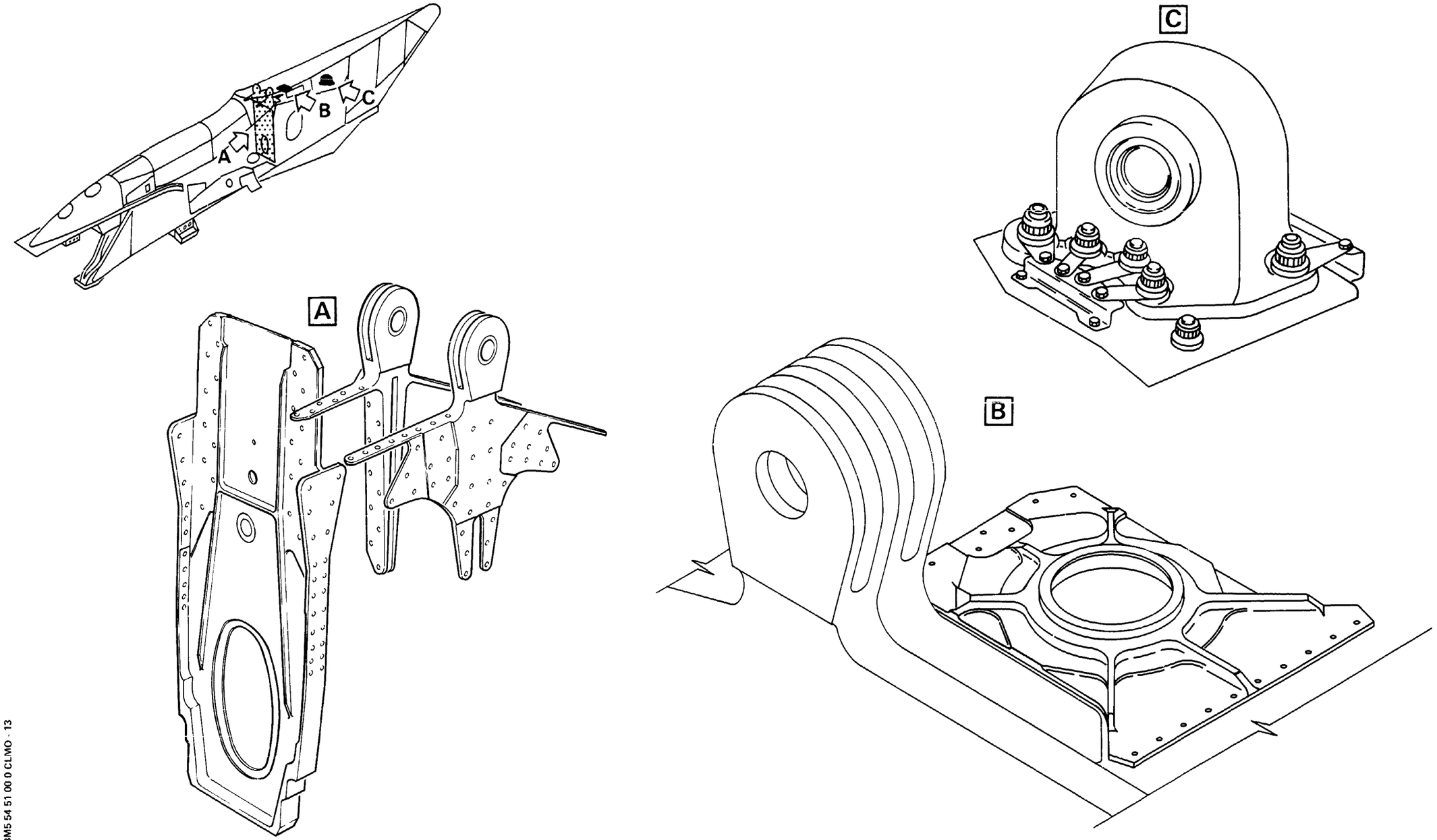

Pylon-to-Wing Attach Fittings
Figure 006

The fail-safe type junction between two yokes and two shackles is provided by a set of bolts. This set is composed of a large-diameter hollow bolt housing a smaller diameter bolt.
Each bolt in yoke is locked against rotation by means of a special nut (Ref. Fig. 007)

2 Aft attach fitting
Aft attach fitting enables attachment of the pylon in one point to the rear spar of the wing box.
Pylon-to-wing junction is provided by two shackles which are connected in their upper section to an attach fitting secured on the wing and in their lower section to a plain bearing eye fitting bolted on RIB18.
The eye fitting is removable and according to the assembly, in R or L pylon configuration. Eye-fitting-to shackles fail safe type junction is provided by a set of bolts identical to those used for forward attach fitting

3 Spigot fitting
The upper panel between RIB12 and RIB13 is equipped with a ball-joint attach fitting in which engages the spigot secured to the wing lower surface. This assembly enables lateral load transfer between pylon and wing.

(b)Pylon-to-engine attach fittings
(Ref. Fig. 008)
The engine is attached to the pylon in two points by two attach fittings.

1 Forward attach fitting
Forward attach fitting enables attachment of the engine in one point located at the intermediate case aft flange.
Forward attach fitting is attached to a plate integral with the engine. This plate is provided with a locating pin which engages in forward attach fitting.
Forward attach fitting is composed of two side attach fittings attached to RIB1 and joined together on engine side by a pyramid attach fitting which houses the locating pin.

2 Aft attach fitting
Aft attach fitting enables attachment of the engine in one point by means of a machined steel beam attached under RIB9C of main frame by means of four bolts. Aft beam is fitted with two locating pins which facilitate engine installation under pylon.
The vertical angular position of the aft beam with respect to pylon lower cap is obtained by means of a wedge positioned in between.

(3)Auxiliary fittings and fillets

(a)Pylon box is equipped with various fittings which enable attachment of pylon-to-engine interface equipment :

1 Fan thrust reverser cowl hinge fittings

2 Core cowl hinge fittings

3 Engine hoist fittings
The side panels between RIBS1 and 12 are provided with metallic edges which ensure aerodynamic continuity with engine cowl doors.
Pylon-to-core cowl junction fairing located on either side of RIB9C comprises a door giving access to engine aft mount.

(4)Fire protection

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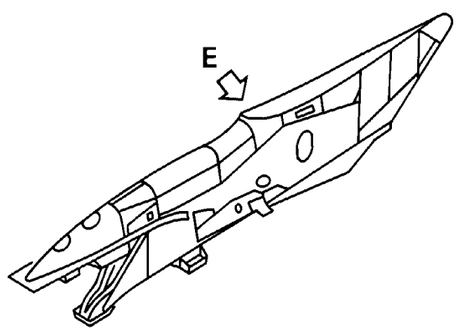

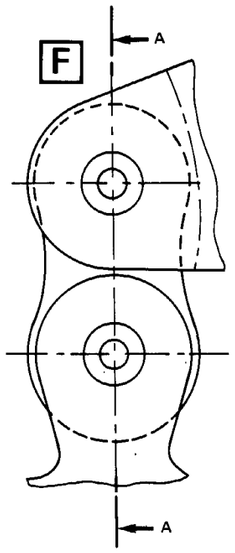

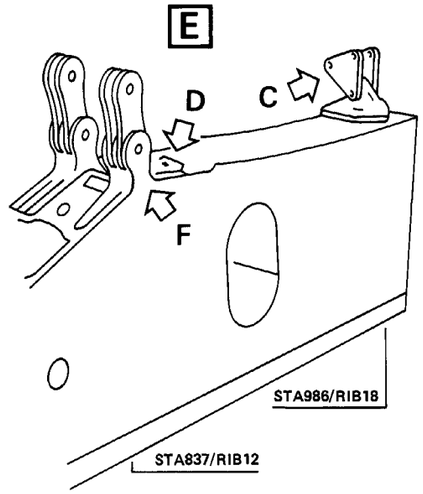

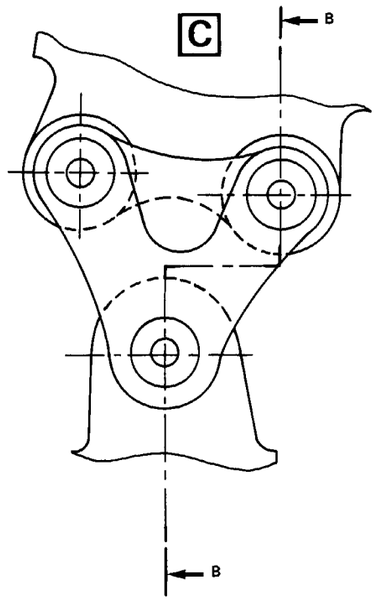

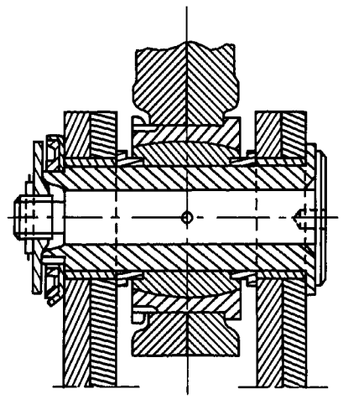

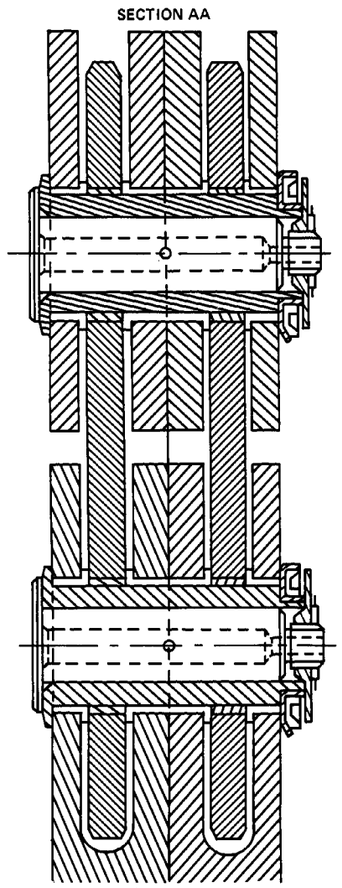

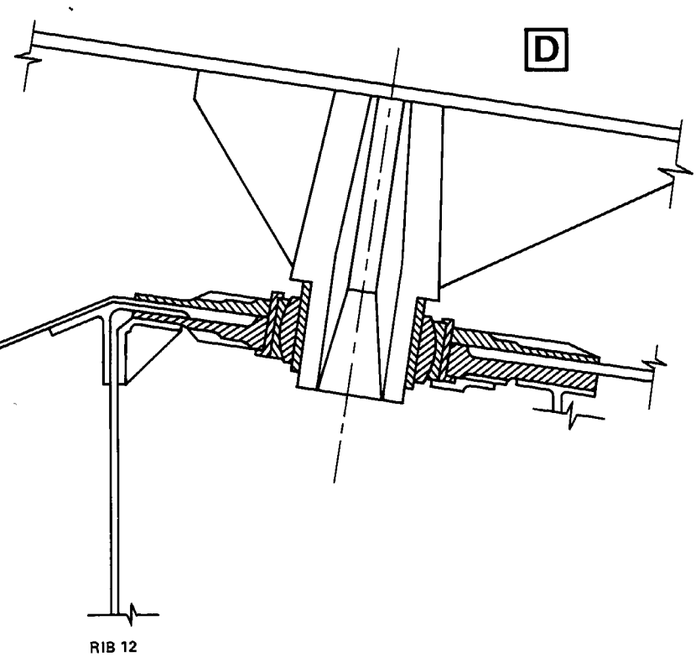

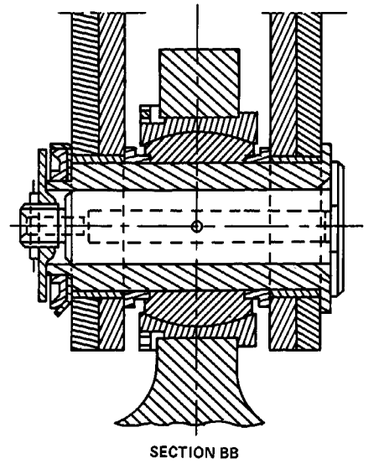

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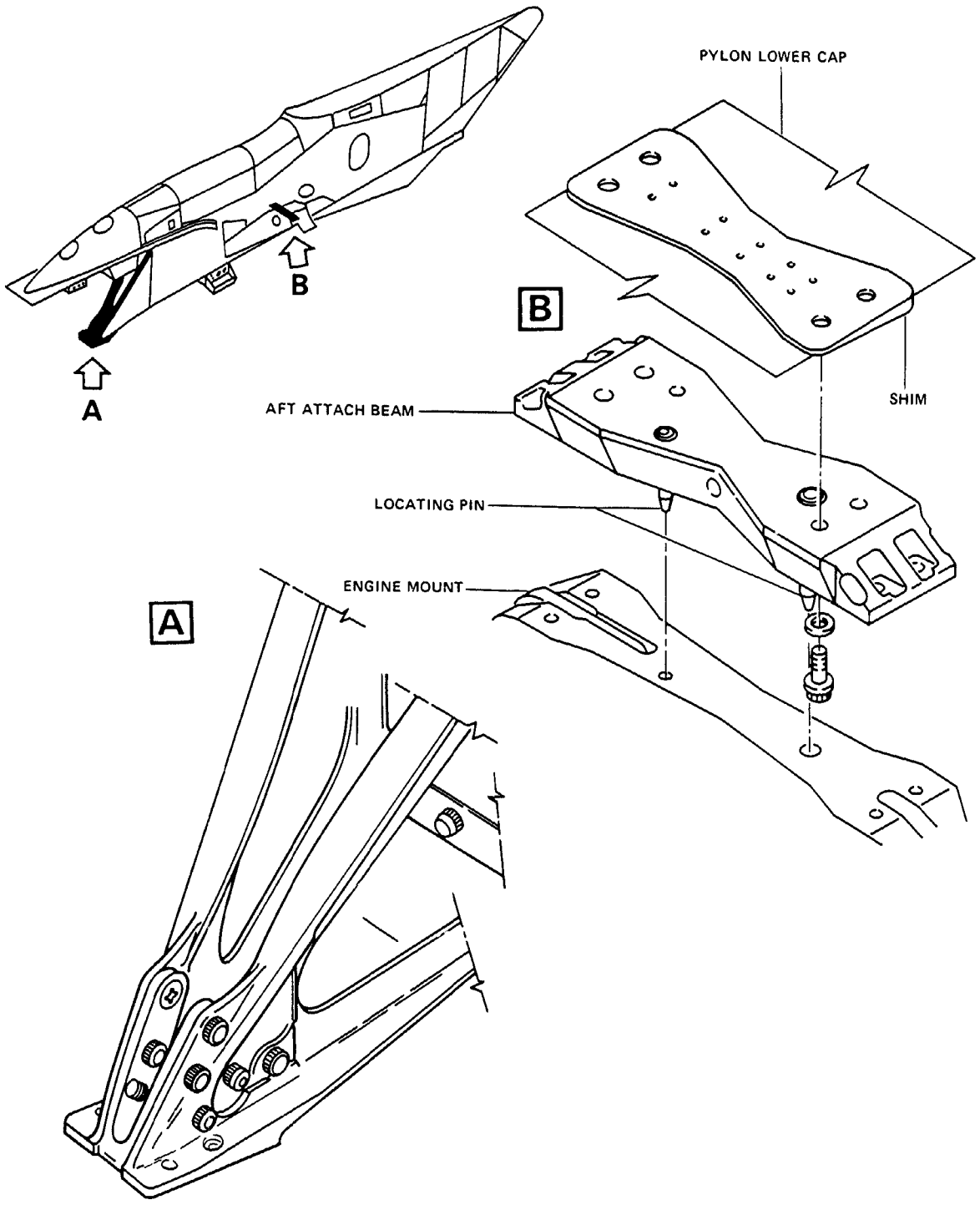
Pylon-to-Wing Attach Fitting Assembly
Figure 007



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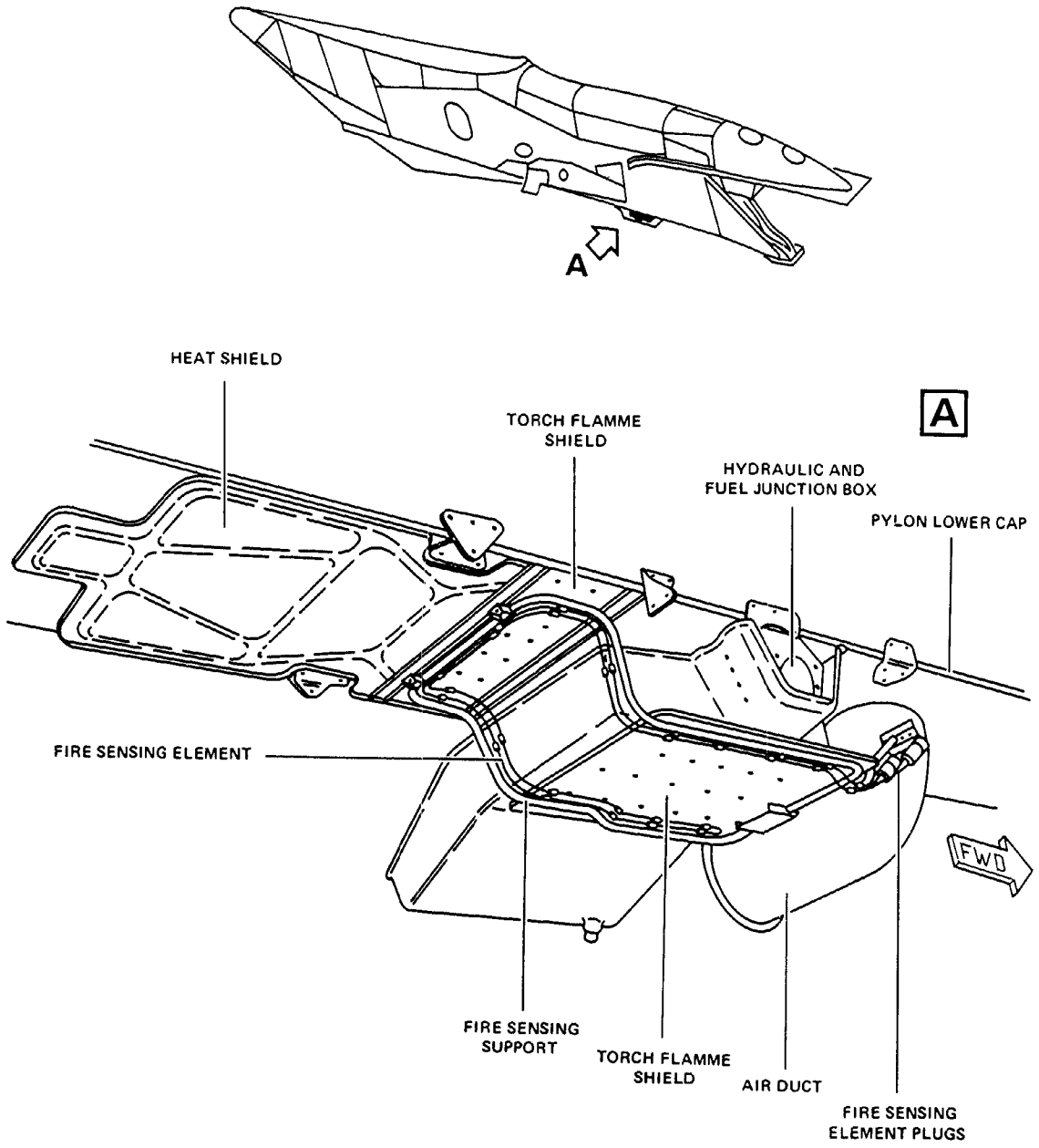
Pylon-to-Engine Attach Fittings
Figure 008

(Ref. Fig. 009)
A torch flame shield located between the hydraulic junction box and pylon lower spar between RIBs 7 and 9 protects that area from the flames in case of engine fire.
The torch flame shield is provided with fire sensing elements which transmit a warning signal to the flight compartment in case of overheat or fire in the protected area.
A heat shield is installed under RIB10, on pylon lower cap to complete engine fire seal (Ref. 71-30-00, P. Block 1).

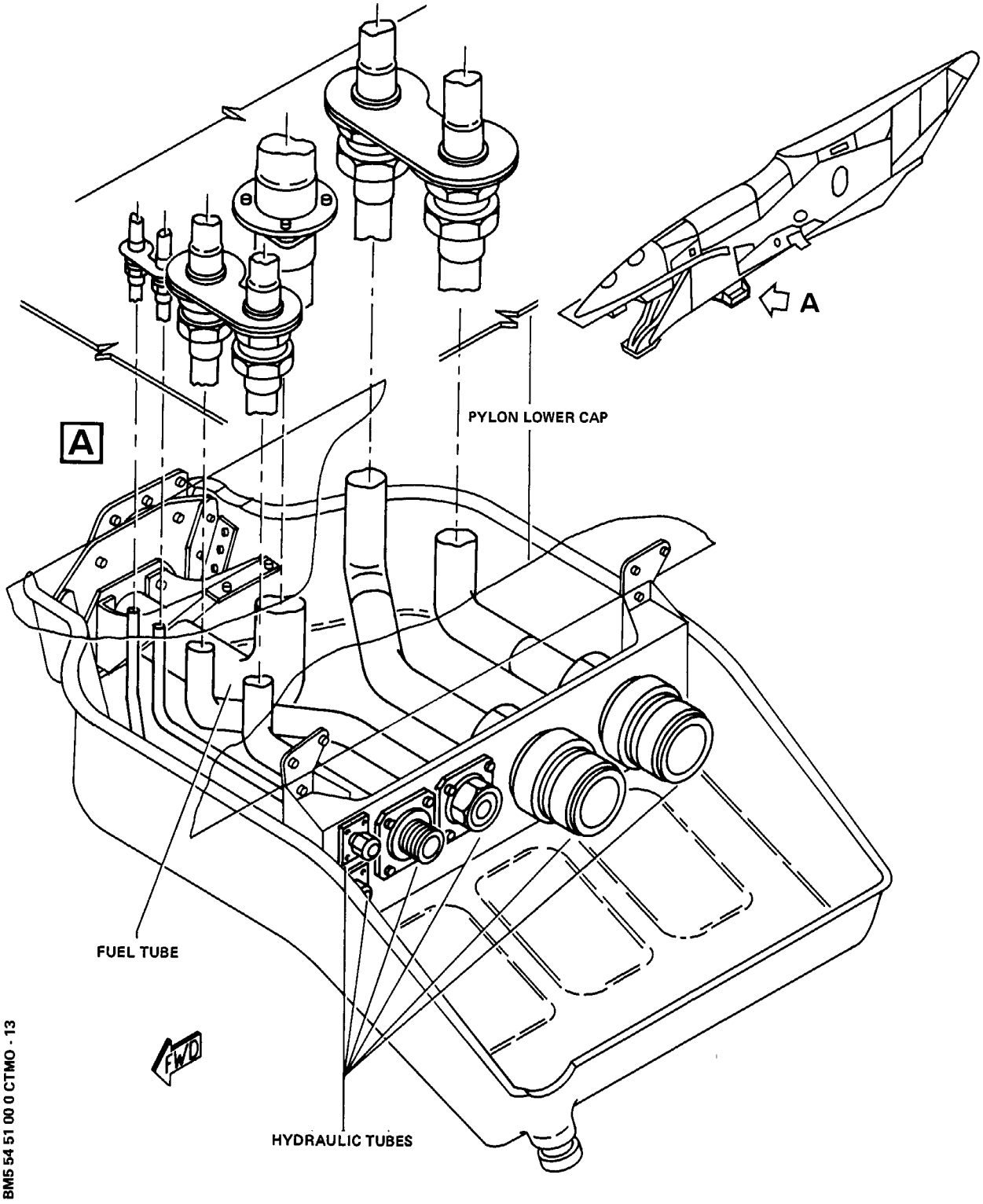
(5) Fire extinguishing system
The pylon box under the lower cap between RIB1 and RIB2 is equipped with an extinguishing agent nozzle connected to the fire extinguisher bottles by a pipe.
This nozzle distributes extinguishing agent into the nacelles when the fire extinguisher bottles are discharged.

(6) Hydraulic junction box
(Ref. Fig. 010)
The hydraulic junction box is attached under the main frame between RIBs 4 and 6. The hydraulic junction box provides pylon-to-engine interface for the hydraulic lines on the L side and the fuel lines on the R side.
The junction box provides also draining of the fluids toward engine drain mast in case of leakage.

(7) Ventilation
On either side panel of the main frame, between RIBs 8B and 9, there is a scoop designed to bleed air from fan stream so as to ventilate compartments A and B.



Fire Protection
Figure 009



Hydraulic Junction Box
Figure 010

1. Side Panels and Door Frames - Inspection/Check

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platforms
(2)	Warning Notice
Referenced Procedure - 71-13-00, P. Block 301	Cowl Doors

B. Procedure

(1)Job set-up

(a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b)Install access platforms

(c)Make certain that slats are retracted and place a warning notice on flap and slat control lever in flight compartment prohibiting its operation.

(2)Damage elimination (Ref. Fig. 601)

(a)Cracks, nicks and dents

NOTE : All dimensions are given after elimination of damage :
- burnishing for scores
- blending for nicks as per referenced figure (Ref. Fig. 601)

All surfaces must be protected after burnishing, blending or drilling
When a damage is detected check for possible growth

(3)Side panels

(a)Make certain that length and depth of cracks, nicks or scores are within permissible limits (after blending or burnishing)
Permissible damage for one recess (area between 2 ribs and 2 stiffeners)
zone 1 : permissible damage
zone 2 : permissible damage with inspection every 6000 flights
zone 3 : damage requiring repair before 500 flights
zone 4 : damage requiring repair after return to base by ferry flight
zone 5 : stop drill crack if required and return to base for repair by ferry flight with manufacturer's consent
zone 6 : damage requiring immediate repair as per Structural Repair Manual or per manufacturer's instructions.
(Ref. Fig. 602)

(4)Door Frames - Side Panels

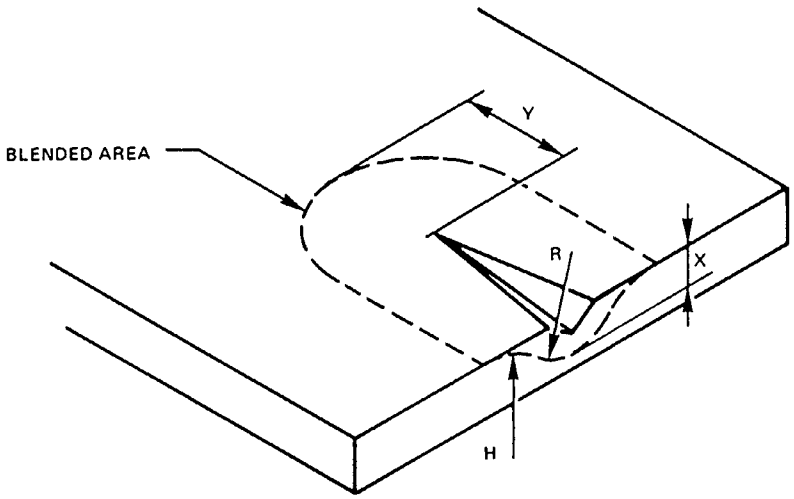
(a)Make certain that max depth of damage after blending is within limits

NOTE : Make certain that there are no cracks by NDT method high frequency (Eddy current)
- every 6000 flights for forward door
- every 12000 flights for aft door

(Ref. Fig. 603)

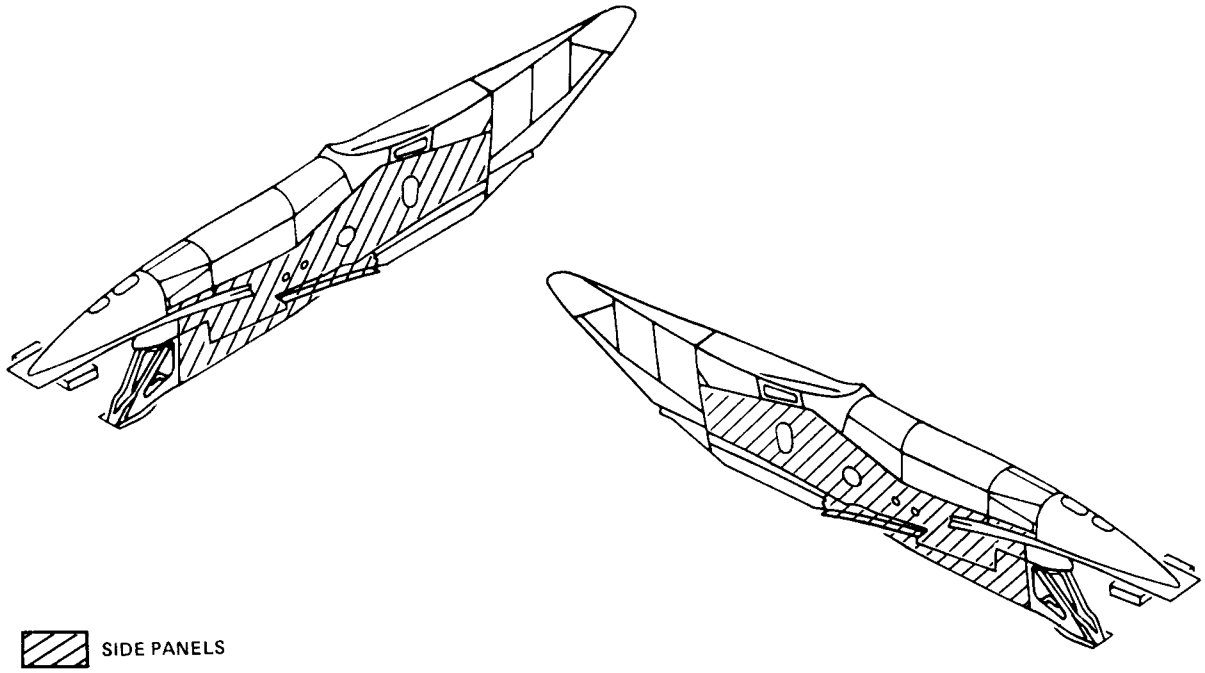
(5)Close-up

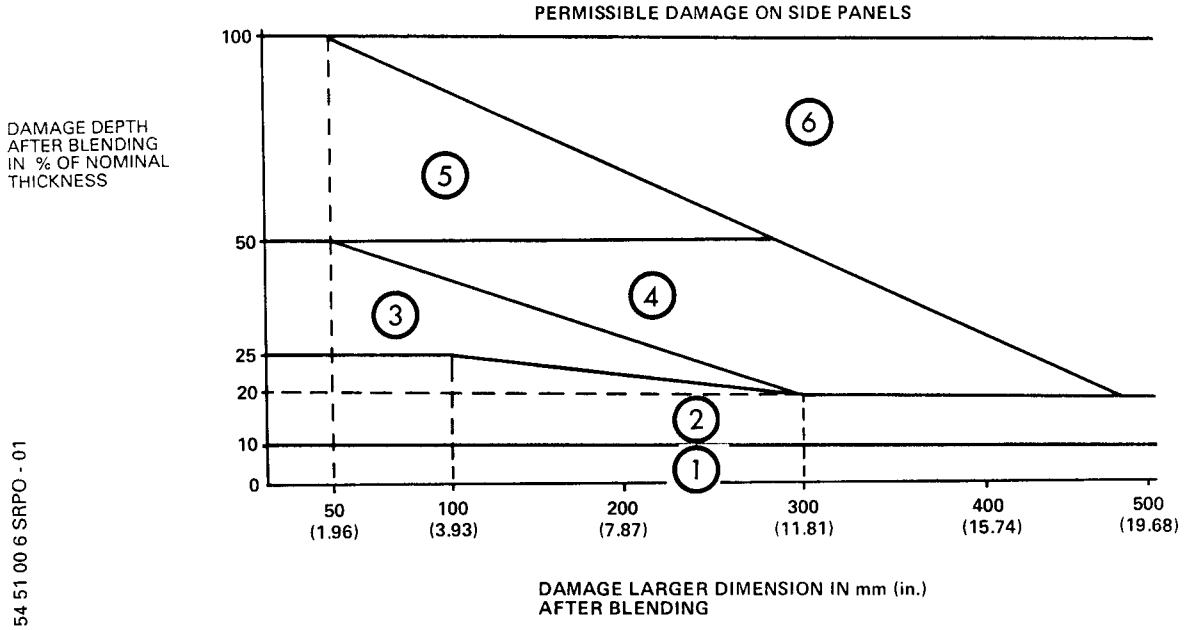
NOTE : Make certain that a protective treatment has been applied on any surface in which a damage has been repaired.



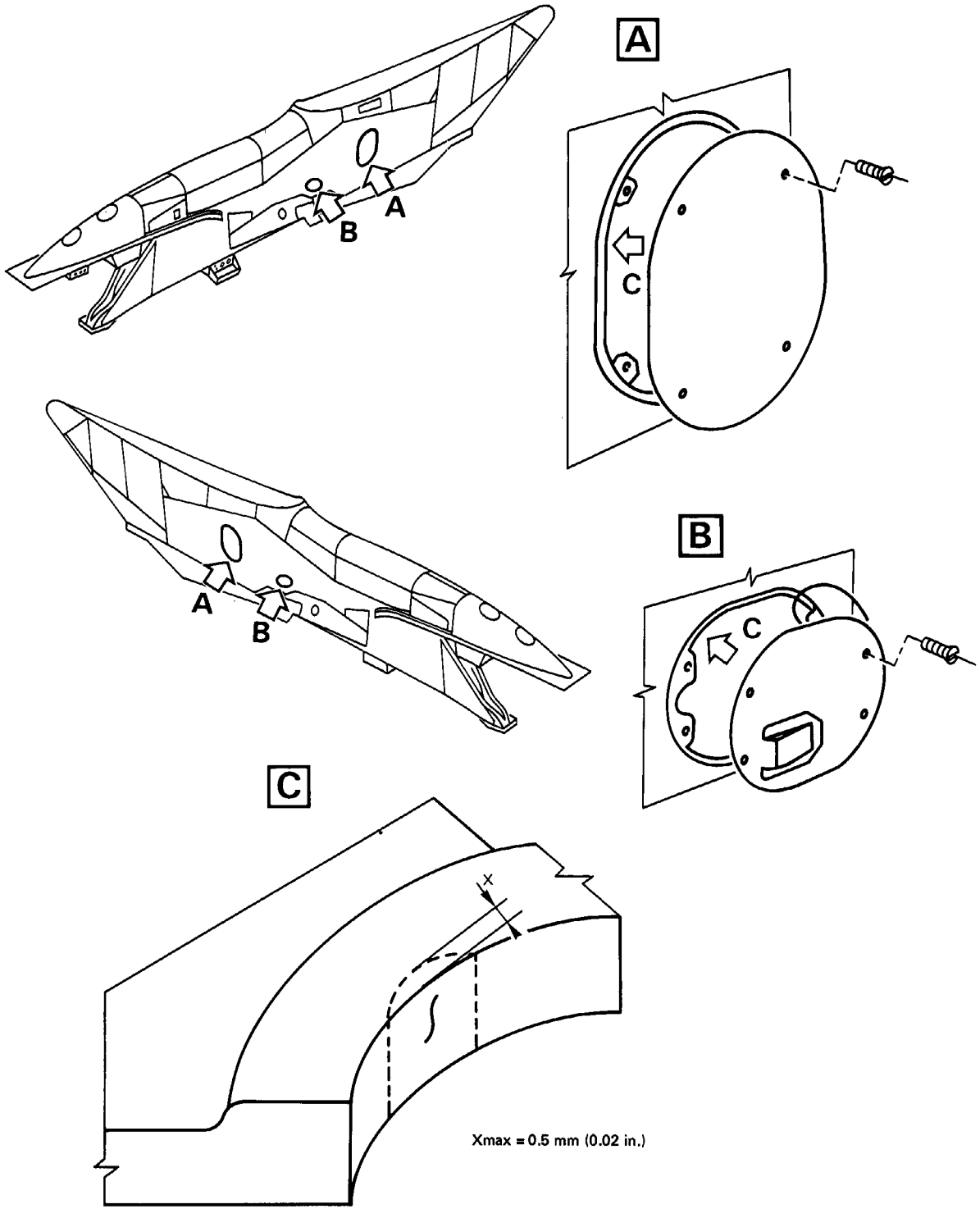
BM5 54 51 00 6 SRMO 12 07
DM5

Blending Limits
Figure 601





R Side Panels
Figure 602



Door Frame and Side Panels
Figure 603

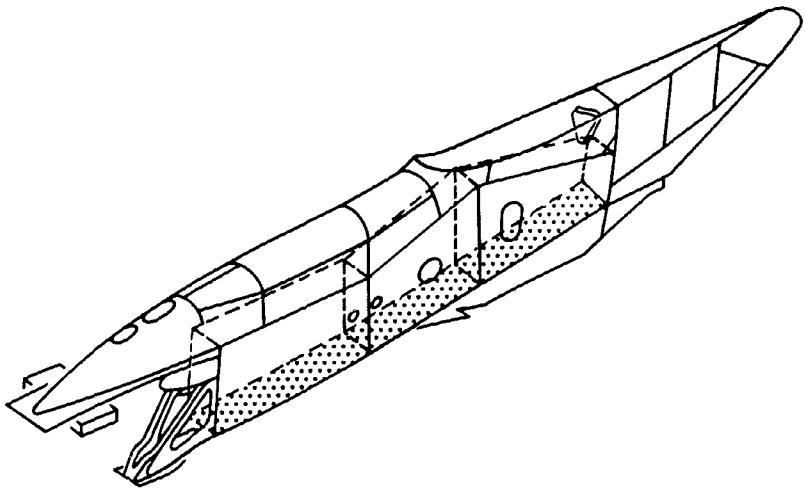
(a)Close cowl doors (Ref. 71-13-00, P. Block 301).
(b)Remove access platform
(c)In flight compartment remove warning notice on flap and slat control lever.

2. Lower Spar - Inspection/Check

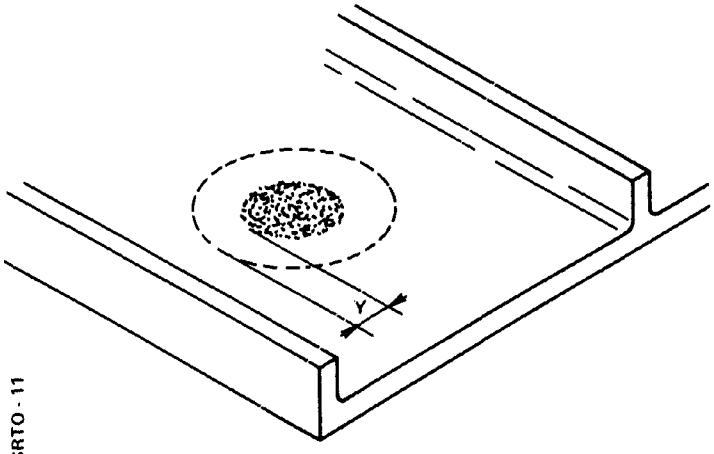
A. Equipment and Materials

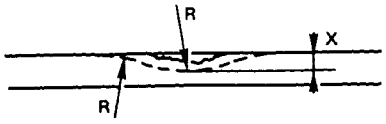
ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice
(3)	Mirror
(4)	Borescope
Referenced Procedures	
- 71-13-00, P. Block 301	Cowl Doors
- 36-11-15, P. Block 401	Bleed Air Precooler
- 36-00-00, P. Block 401	Pneumatic
- 26-21-15, P. Block 401	Engine Fire Extinguisher Bottles
R - SRM/54-51-71, P. Block 101	

B. Procedure
(1)Job set-up
(a)Open cowl doors (Ref. 71-13-00, P. Block 301).
R (b)Open access doors 474AR (484AR), 473AL (483AL), 416AR (426AR), 415AL
R (425AL).
R (c)Remove the following components to facilitate access to the various areas.
1 Bleed air precooler (Ref. 36-11-15, P. Block 401).
2 Bleed air precooler cold air inlet duct (Ref. 36-00-00, P. Block 401).
(2)Damage elimination (Ref. Fig. 601)
(a)Cracks nicks and dents
NOTE : All dimensions are given after elimination of damage :
- burnishing for scores
- blending for nicks as per referenced figure (Ref. Fig. 601)
All surfaces must be protected after burnishing, blending or drilling
When a damage is detected check for a possible growth
(3)Inspection
(a)Using a mirror and a borescope check conditions of lower spar
(b)Blend damage.
(c)Make certain that length and depth of damage (after blending) are
R within limits (Ref. SRM 54-51-71, P. Block 101) (Ref. Fig. 605)
Zone 1 : Permissible damage
Zone 2 : Damage requiring immediate repair as per manufacturer's instructions.
WARNING : IF DURING INSPECTION, CORROSION IS EVIDENCED NEAR THE LOWER CAP-TO-FWD PYRAMID JUNCTION, THE DEFECT WILL BE CONSIDERED AS PERTAINING TO ZONE 2.
(Ref. Fig. 605)
(Ref. Fig. 604)



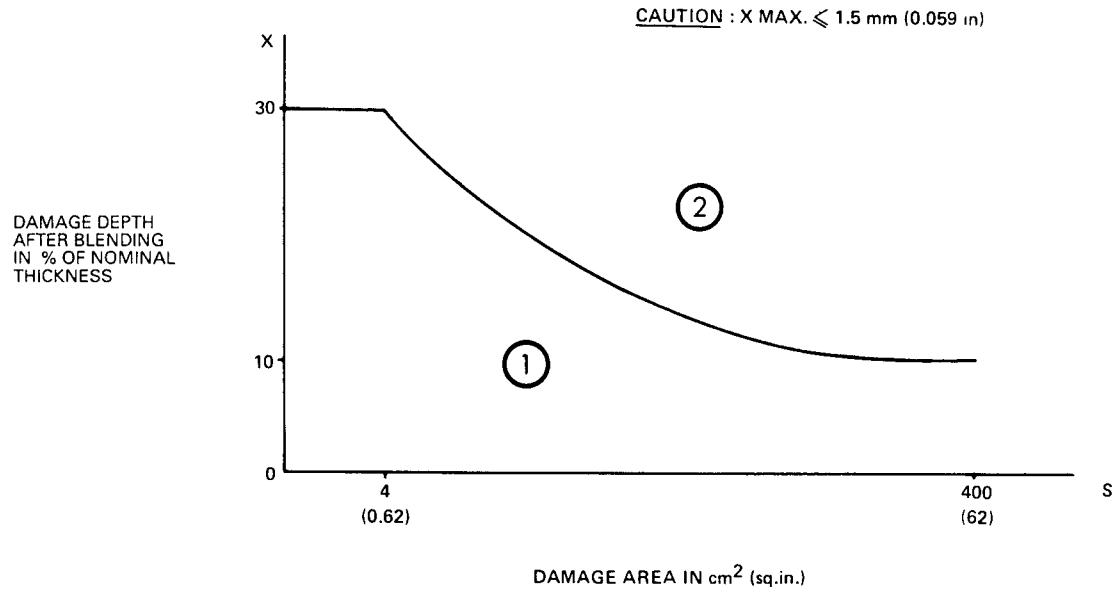
NOTE = Xmax = 30% OF THICKNESS
WITH X ≤ 1,5 mm (0.059 in.)





BM5 54 51 00 6 SRTO-11

Lower Spar - Blending Limits
Figure 604



BM5 54 51 00 6 SRVO - 01

Lower Spar - Permissible Damage
Figure 605

R

(Ref. Fig. 606)

(4)Close-up

NOTE : Make certain that a protective treatment has been applied on any surface in which a damage has been repaired.

(a)Install engine fire extinguisher bottles (Ref. 26-21-15, P. Block 401).

(b)Install rods located on upper panel between RIBS1 and 8.

(c)Install bleed air precooler cold air inlet duct (Ref. 36-00-00, P. Block 401).

(d)Install bleed air precooler (Ref. 36-11-15, P. Block 401).

(e)Close access doors 474AR (484AR), 473AL (483AL), 416AR (426AR), 415AL (425AL).

R NOTE : The correct installation position of the access doors 416AR
R (426AR), 415AL (425AL) is with the open end of the air scoop
R facing forward.

(f)In flight compartment, remove warning notice from flap and slat control lever.

(g)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

(h)Remove access platforms

(i)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

3. Inspection/Check of Shackles at RIB12

NOTE : Perform the inspection at pylon removal and with shackles removed.

A. Procedure

(1)Check for corrosion, make certain that traces of corrosion are within permissible damage limits

(a)Damage surface on only one side face less then 4 cm^2 (0.62 sq.in.) - maximum depth of defect 1.5 mm (0.059 in.)

(b)Damaged surfaces on both side faces less then 4cm^2 (0.62 sq.in.) - sum of both maximum depths of defects on either face : 1.5 mm (0.059 in.)

(c)Damaged surface on only one side face more than 4cm^2 (0.62 sq.in.) - maximum depth of defect 1 mm (0.039 in.)

(d)Damaged faces on both side faces more than 4 cm^2 (0.62 sq.in.) - sum of maximum depths of defects on either face : 1 mm (0.039 in.)

(e)Damaged surface around bore, on only one side face
- maximum dimension of defect measured along radius less than 25 mm (1 in.).
- maximum depth of defect : 0.6 mm (0.023 in.).

(f)Damaged surface around bore, on both side faces
- maximum dimension of defect measured along radius less than 25 mm (1 in.).
- sum of maximum depth of defects on either face : 0.6 mm (0.023 in.).

(2)Remove corrosion and protect damaged surface

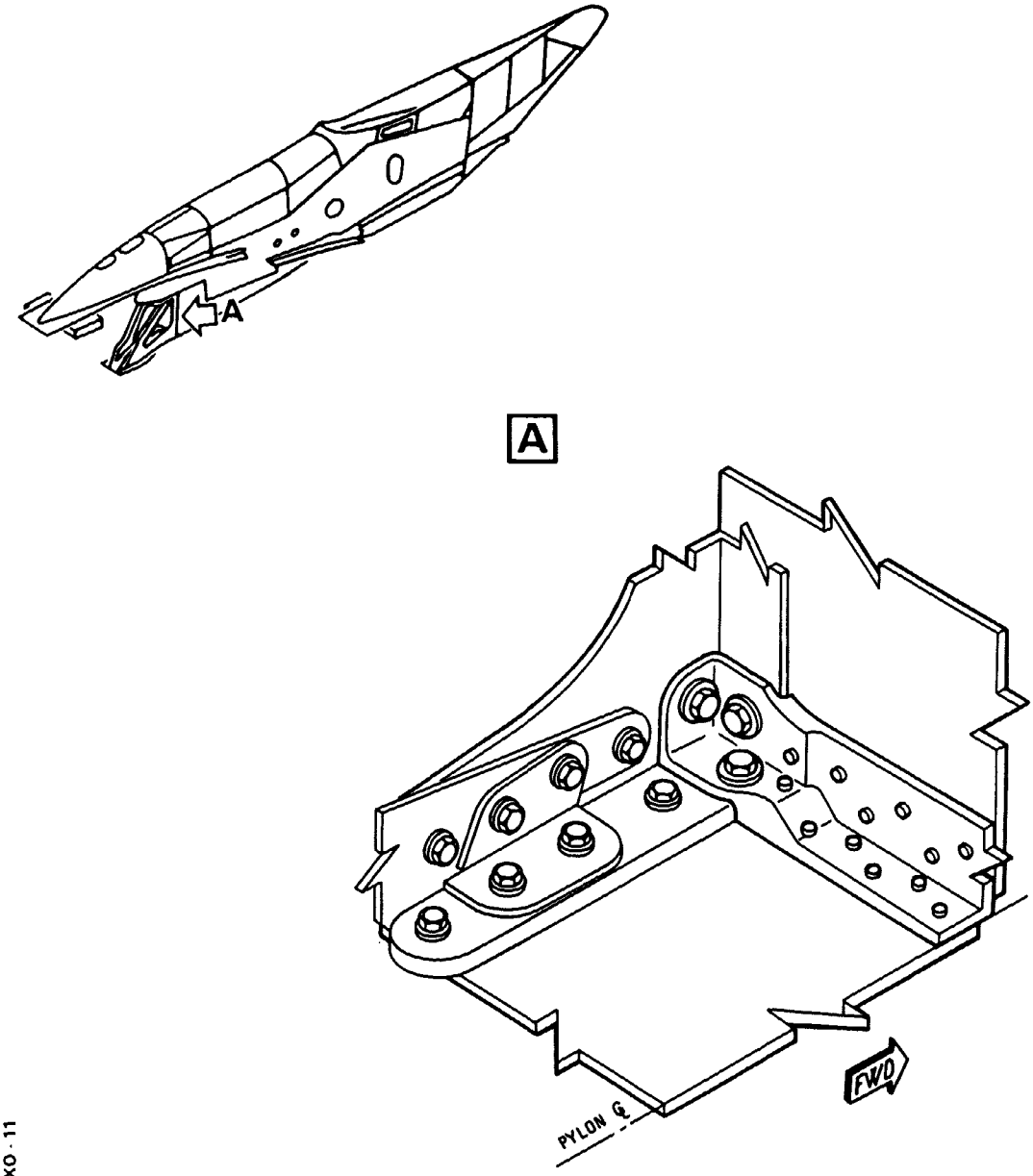
(3)Check if sleeves are in correct position

R

(Ref. Fig. 607)

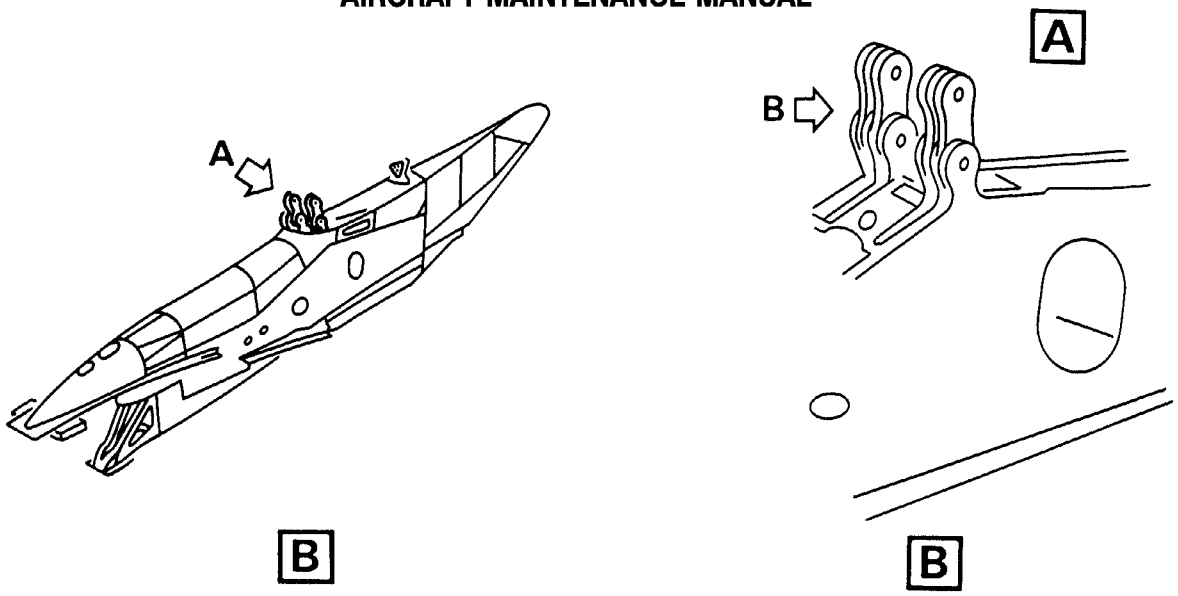
4. Beams at Engine Attach Fitting - Inspection

NOTE : Carry out the inspection at engine removal



BM5 54 51 00 6 SRXO 11

Lower Cap-to-Fwd Pyramid Junction
Figure 606



A	< 400 mm² 0.62 sq.in.,	> 400 mm² 0.62 sq.in.
N MINI	B – 1.5 mm B – 0.059 in.	B – 1 mm B – 0.039 in.

Permissible Corrosion on Shackles
Figure 607

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
Referenced Procedures	
- 54-51-85, P. Block 401	Aft Attach Fitting
- 54-51-85, P. Block 801	Aft Attach Fitting

B. Procedure

(1)Job set-up

(a)Install access platform and remove engine aft attach fitting (Ref. 54-51-85, P. Block 401).

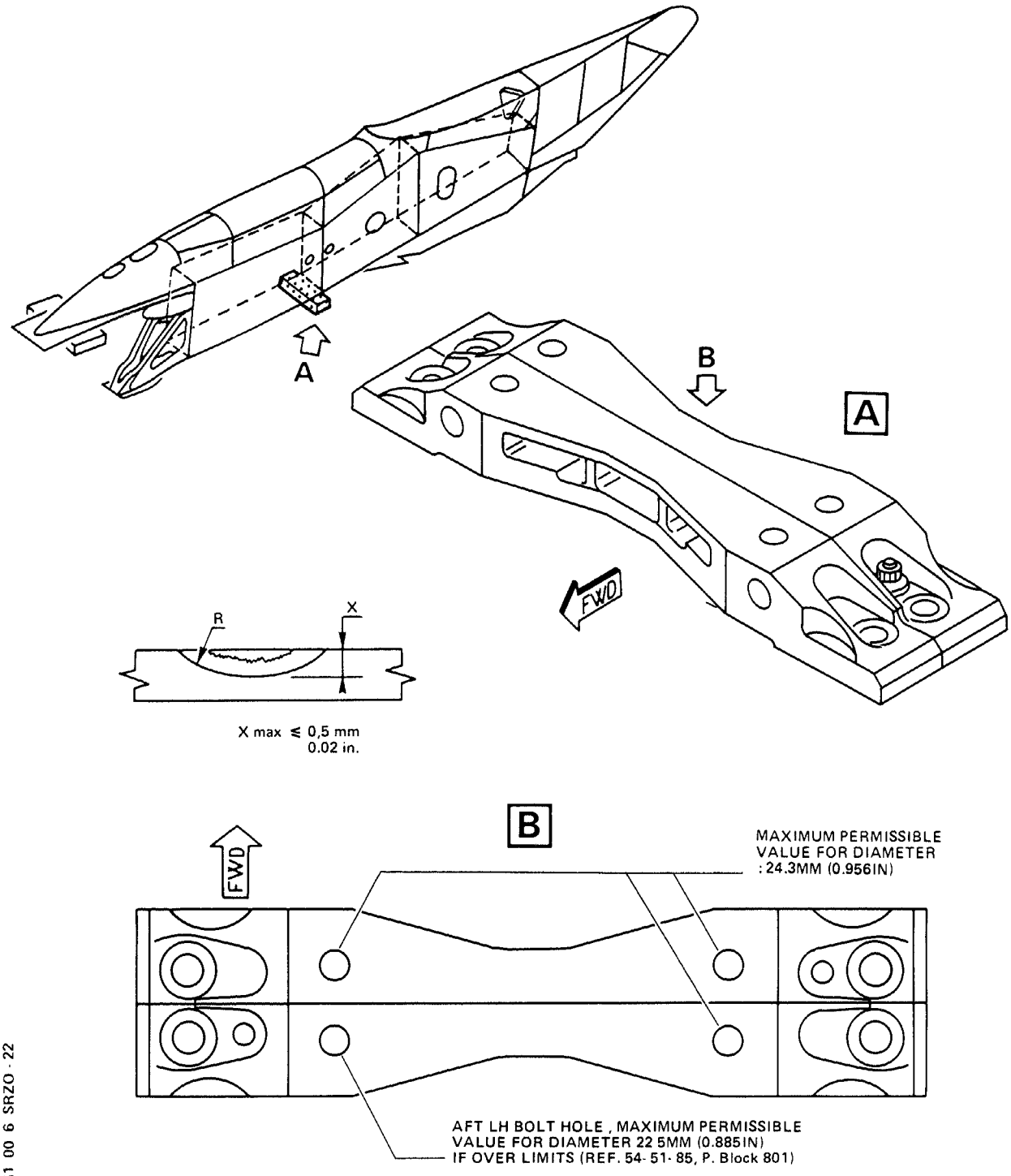
(2)Inspection/check

(a)Check for corrosion and remove it if necessary

WARNING : CORROSION WITHIN PERMISSIBLE LIMITS IS ONLY AUTHORIZED FOR ONE ATTACH FITTING ; MAKE CERTAIN THAT THE ADJACENT FITTING HAS NO DEFECT.

(b)Check diameter of pylon to engine aft attach fitting bolt holes. If rear left hole limit value is exceeded, (Ref. 54-51-85, P. Block 801) for repair procedure.

(c)Apply a protective treatment on any surface in which a damage has been repaired.
(Ref. Fig. 608)



BM5 54 51 00 6 SRZO - 22

Permissible Corrosion on Pylon-to-Engine Attach Fitting Beams
Figure 608

1. Side Panels and Door Frames - Inspection/Check

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platforms
(2)	Warning Notice
Referenced Procedure - 71-13-00, P. Block 301	Cowl Doors

B. Procedure

(1)Job set-up

(a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b)Install access platforms

(c)Make certain that slats are retracted and place a warning notice on flap and slat control lever in flight compartment prohibiting its operation.

(2)Damage elimination

(Ref. Fig. 601)

(a)Cracks, nicks and dents

NOTE : All dimensions are given after elimination of damage :
- burnishing for scores
- blending for nicks as per referenced figure (Ref. Fig. 601)

All surfaces must be protected after burnishing, blending or drilling
When a damage is detected check for possible growth

(3)Side panels

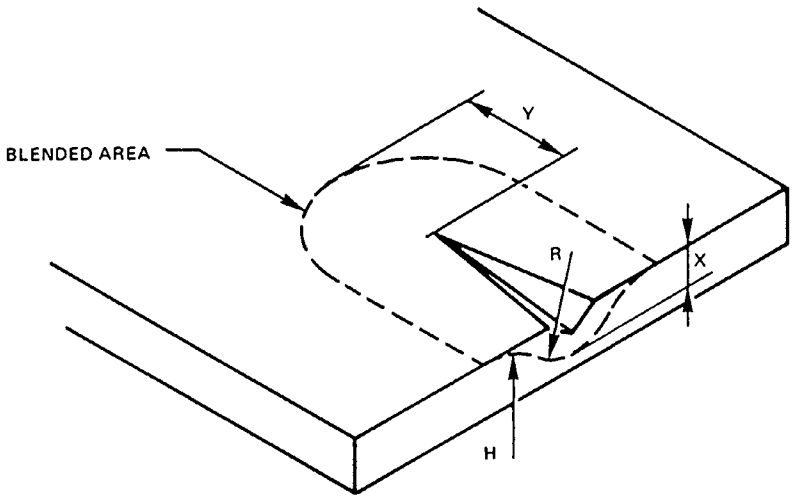
(a)Make certain that length and depth of cracks, nicks or scores are within permissible limits (after blending or burnishing)
(Ref. Fig. 602)
Permissible damage for one recess (area between 2 ribs and 2 stiffeners)
zone 1 : permissible damage
zone 2 : permissible damage with inspection every 6000 flights
zone 3 : damage requiring repair before 500 flights
zone 4 : damage requiring repair after return to base by ferry flight
zone 5 : stop drill crack if required and return to base for repair by ferry flight with manufacturer's consent
zone 6 : damage requiring immediate repair as per Structural Repair Manual or per manufacturer's instructions.

(4)Door Frames - Side Panels

(a)Make certain that max depth of damage after blending is within limits
(Ref. Fig. 603)
NOTE : Make certain that there are no cracks by high frequency (Eddy current) NDT method
- every 6000 flights for forward door
- every 12,000 flights for aft door

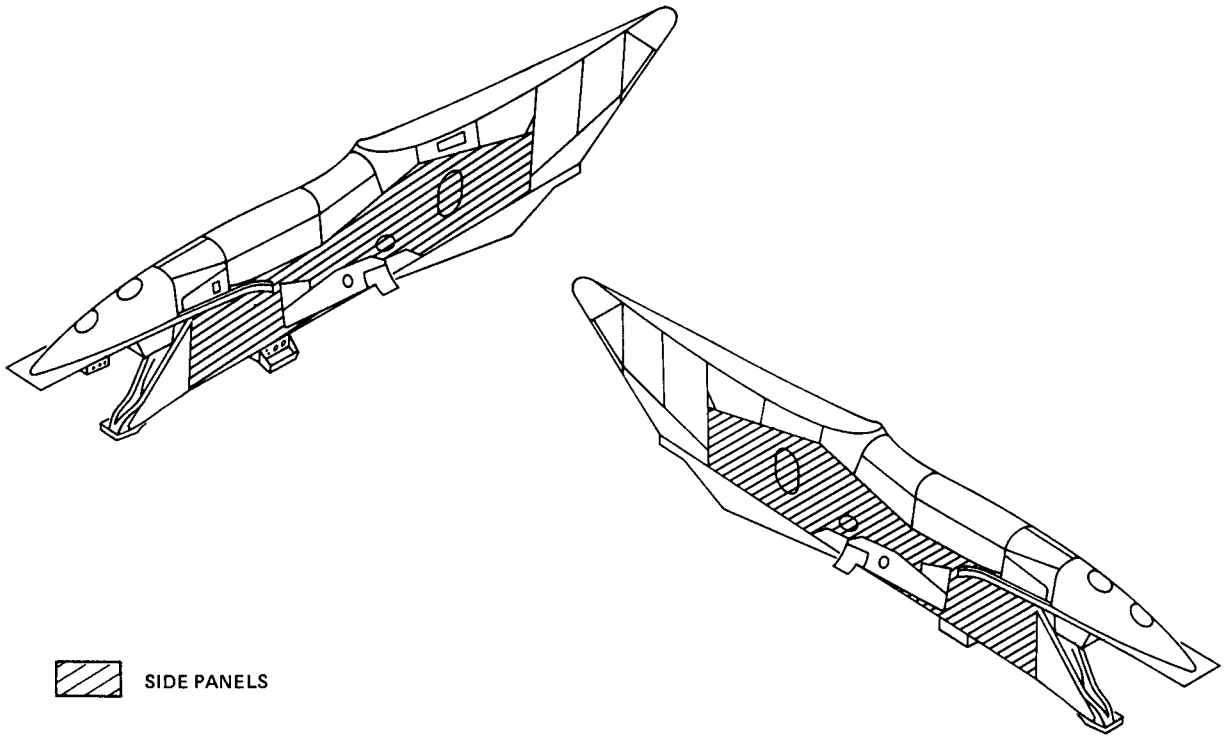
(5)Close-up

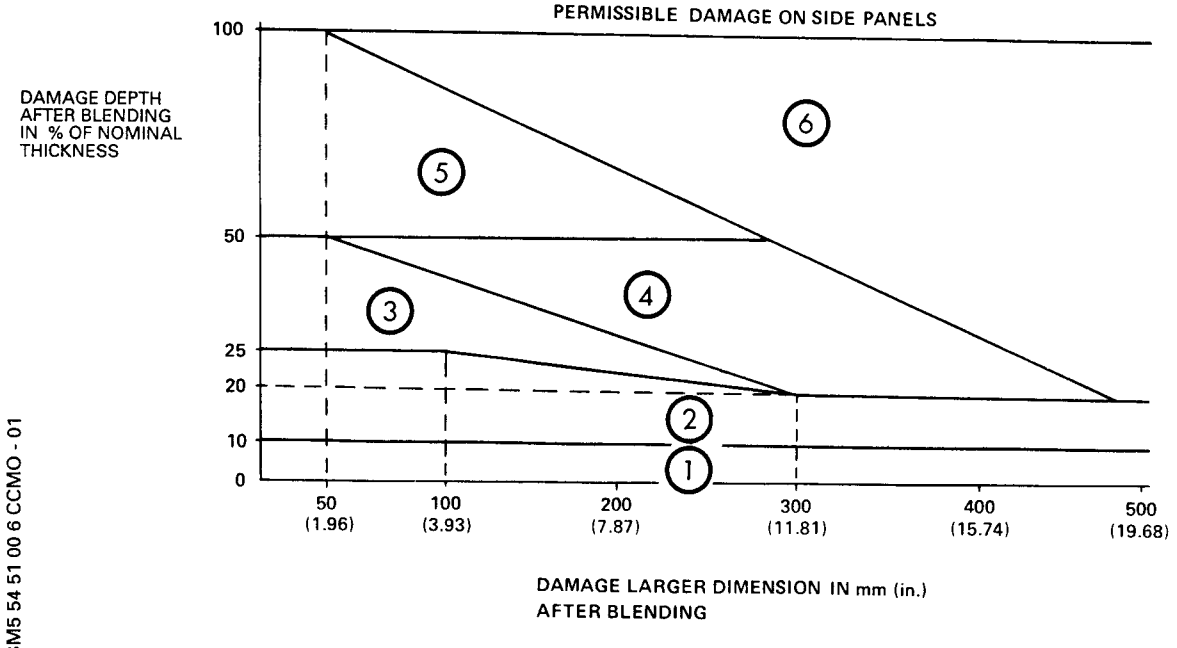
NOTE : Make certain that a protective treatment has been applied on any



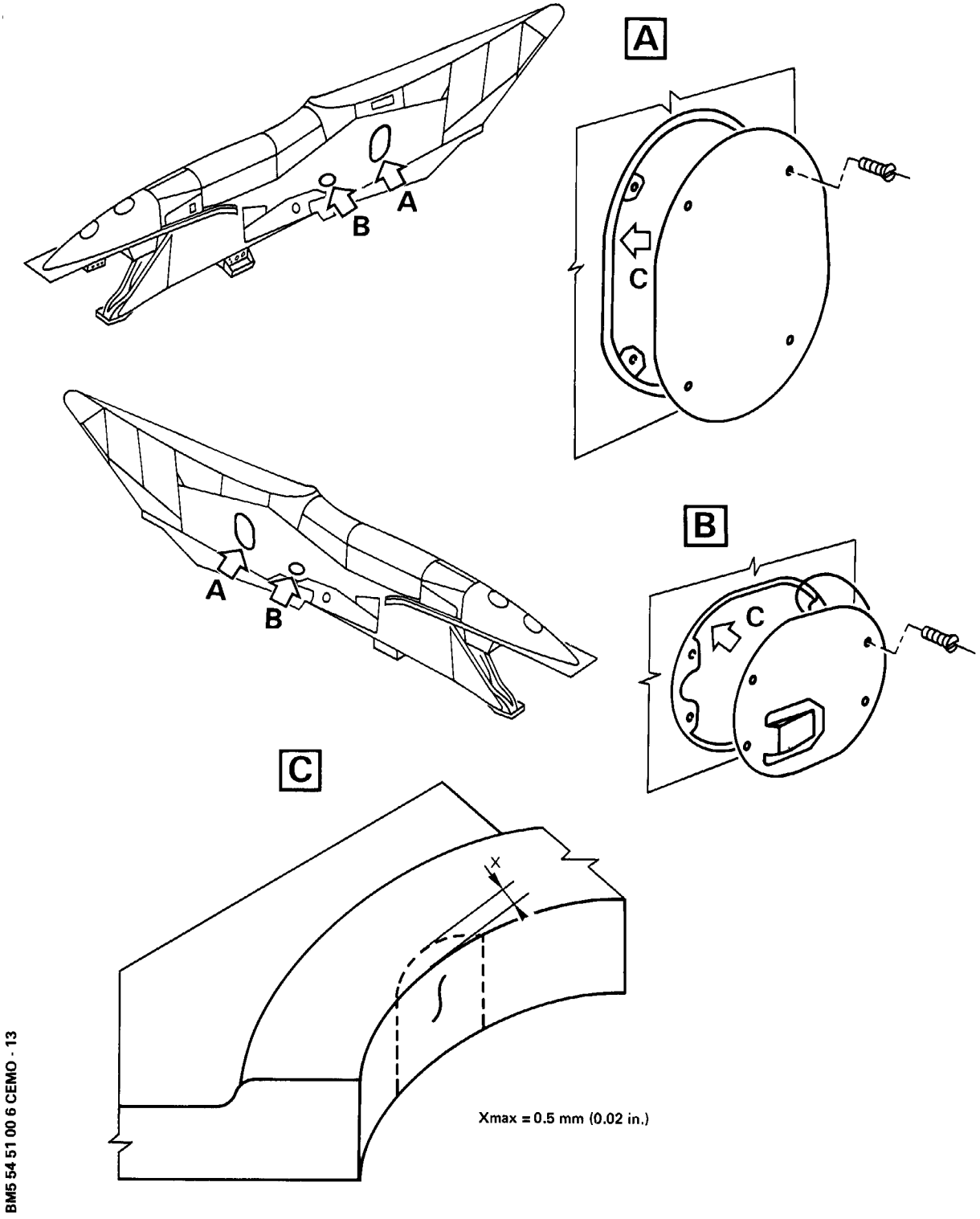
BM5 54 51 00 6 SRMO 12 07
DM5

Blending Limits
Figure 601





Side Panels
Figure 602



Door Frame and Side Panels
Figure 603

surface in which a damage has been repaired.

(a)Close cowl doors (Ref. 71-13-00, P. Block 301).

(b)Remove access platform

(c)In flight compartment remove warning notice on flap and slat control lever.

2. Lower Spar - Inspection/Check

NOTE : Perform the inspection at pylon removal

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice
(3)	Mirror
(4)	Borescope
Referenced Procedures	
- 71-13-00, P. Block 301	Cowl Doors
- 36-11-15, P. Block 401	Bleed Air Precooler
- 36-11-00, P. Block 401	Engine Bleed Air Supply System - Ducting
- 26-21-15, P. Block 401	Engine Fire Extinguisher Bottles
- 54-55-00, P. Block 401	Lower Fairing
- SRM/54-51-71, P. Block 101	

B. Procedure

(1)Job set-up

(a)Open cowl doors (Ref. 71-13-00, P. Block 301).

(b)Open access doors 474AR(484AR), 473AL(483AL), 416AR(426AR), 415AL (425AL).

(c)Remove the following components to facilitate access to the various areas.

1 Bleed air precooler (Ref. 36-11-15, P. Block 401).

2 Bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).

3 Remove engine fire extinguisher bottles (Ref. 26-21-15, P.Block 401).

4 Remove pylon lower fairing (Ref. 54-55-00, P. Block 401).

(2)Damage elimination (Ref. Fig. 601)

(a)Cracks nicks and dents

NOTE : All dimensions are given after elimination of damage :

- burnishing for scores
- blending for nicks as per referenced figure (Ref. Fig. 601)

All surfaces must be protected after burnishing, blending or drilling

When a damage is detected check for a possible growth

(3)Inspection

(a)Using a mirror and a borescope check conditions of lower spar

(b)Blend damage (Ref. Fig. 604)

(c)Make certain that length and depth of damage (after blending) are within limits (Ref. SRM 54-51-71, P. Block 101) (Ref. Fig. 605)

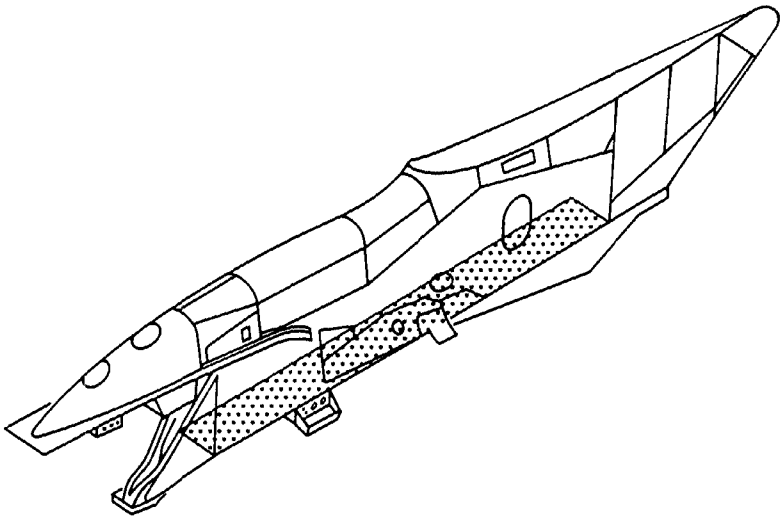
Zone 1 : Permissible damage

Zone 2 : Damage requiring immediate repair as per manufacturer's instructions.

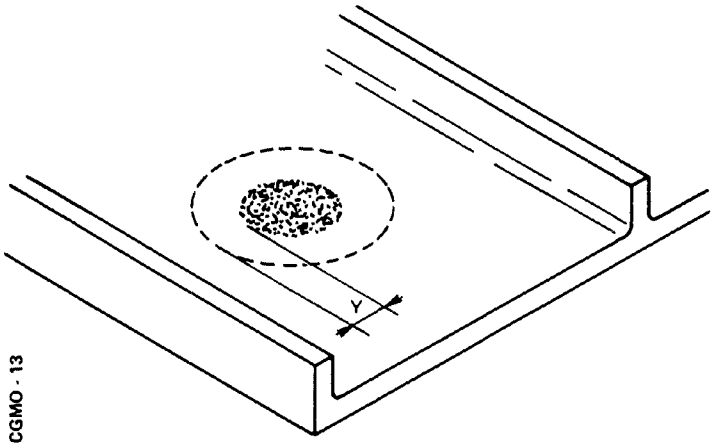
WARNING : IF DURING INSPECTION, CORROSION IS EVIDENCED NEAR THE LOWER CAP-TO-FORWARD PYRAMID JUNCTION (Ref. Fig. 606), THE DEFECT WILL BE CONSIDERED AS PERTAINING TO ZONE 2. (Ref. Fig. 605)

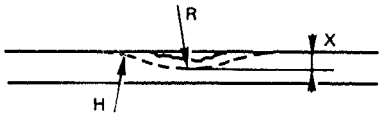
(4)Close-up

NOTE : Make certain that a protective treatment has been applied on any



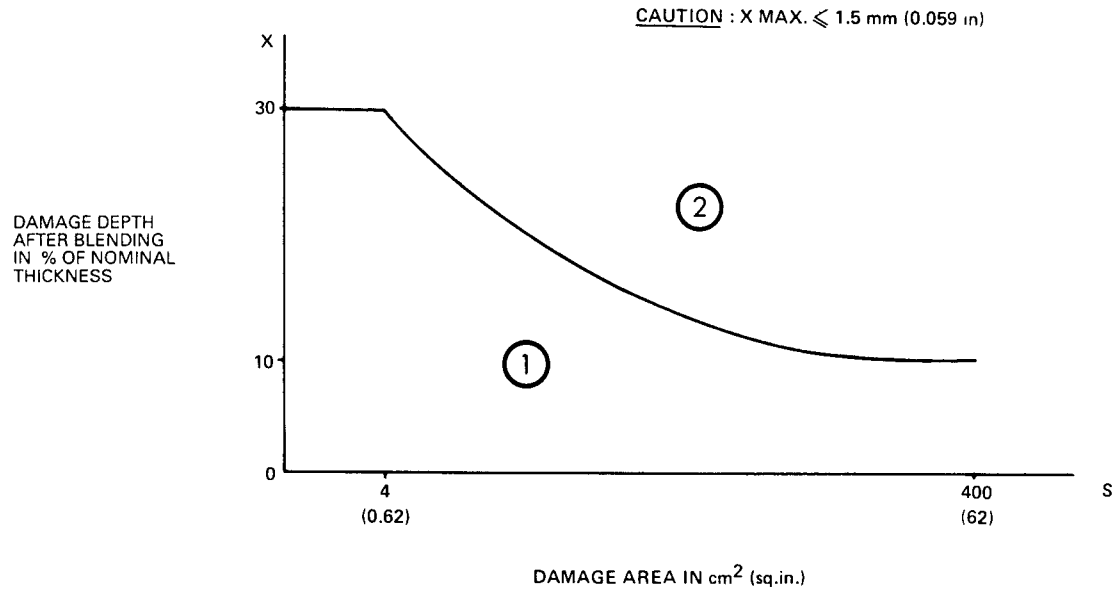
NOTE = Xmax = 30% OF THICKNESS
WITH X ≤ 1,5 mm (0.059 in.)
AND R=H





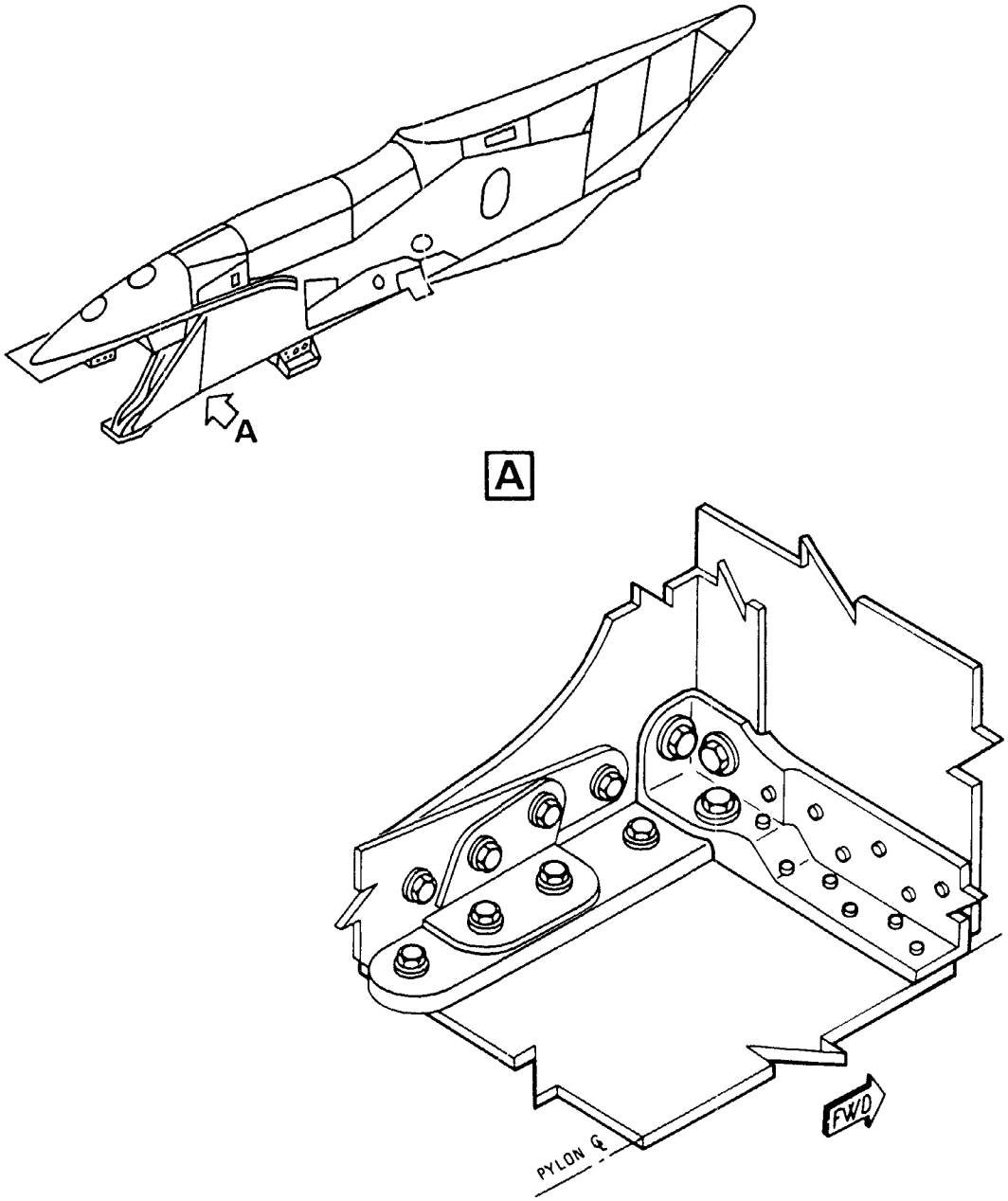
BM5 54 51 00 6 CGMO-13

Lower Spar - Blending Limits
Figure 604



BM5 54 51 00 6 SRVO - 01

Lower Spar - Permissible Damage
Figure 605



BM5 54 51 00 6 CNMO-13

Lower Cap-to-Forward Pyramid Junction
Figure 606

surface in which a damage has been repaired.

(a)Install engine fire extinguisher bottles (Ref. 26-21-15, P. Block 401).
(b)Install pylon lower fairing (Ref. 54-55-00, P. Block 401).
(c)Install bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).
(d)Install bleed air precooler (Ref. 36-11-15, P. Block 401).
(e)Close access doors 474AR (484AR), 473AL (483AL), 416AR (426AR), 415AL (425AL).

NOTE : The correct installation position of the access doors 416AR (426AR), 415AL (425AL) is with the open end of the air scoop facing forward.

(f)In flight compartment, remove warning notice from flap and slat control lever.
(g)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(h)Remove access platforms
(i)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

3. Inspection/Check of Shackles at RIB12
NOTE : Perform the inspection at pylon removal and with shackles removed.

A. Procedure
(1)Check for corrosion, make certain that traces of corrosion are within permissible damage limits
(Ref. Fig. 607)
(a)Damage surface on only one side face less than 4 cm² (0.62 sq.in.).
- maximum depth of defect 1.5 mm (0.059 in.)
(b)Damaged surfaces on both side faces less then 4cm²
- sum of both maximum depths of defects on either face : 1.5 mm (0.059 in.)
(c)Damaged surface on only one side face more than 4cm² (0.62 sq.in).
- maximum depth of defect 1 mm (0.039 in.)
(d)Damaged faces on both side faces more than 4 cm² (0.62 sq.in.).
- sum of maximum depths of defects on either face : 1 mm (0.039 in.)
(e)Damaged surface around bore, on only one side face
- maximum dimension of defect measured along radius less than 25 mm (1 in.).
- maximum depth of defect : 0.6 mm (0.023 in.).
(f)Damaged surface around bore, on both side faces
- maximum dimension of defect measured along radius less than 25 mm (1 in.).
- sum of maximum depth of defects on either face : 0.6 mm (0.023 in.).
(2)Remove corrosion and protect damaged surface
(3)Check if sleeves are in correct position

4. Check for Presence of Upper Panel Rods Between RIB1 and RIB8

A. Equipment and Materials

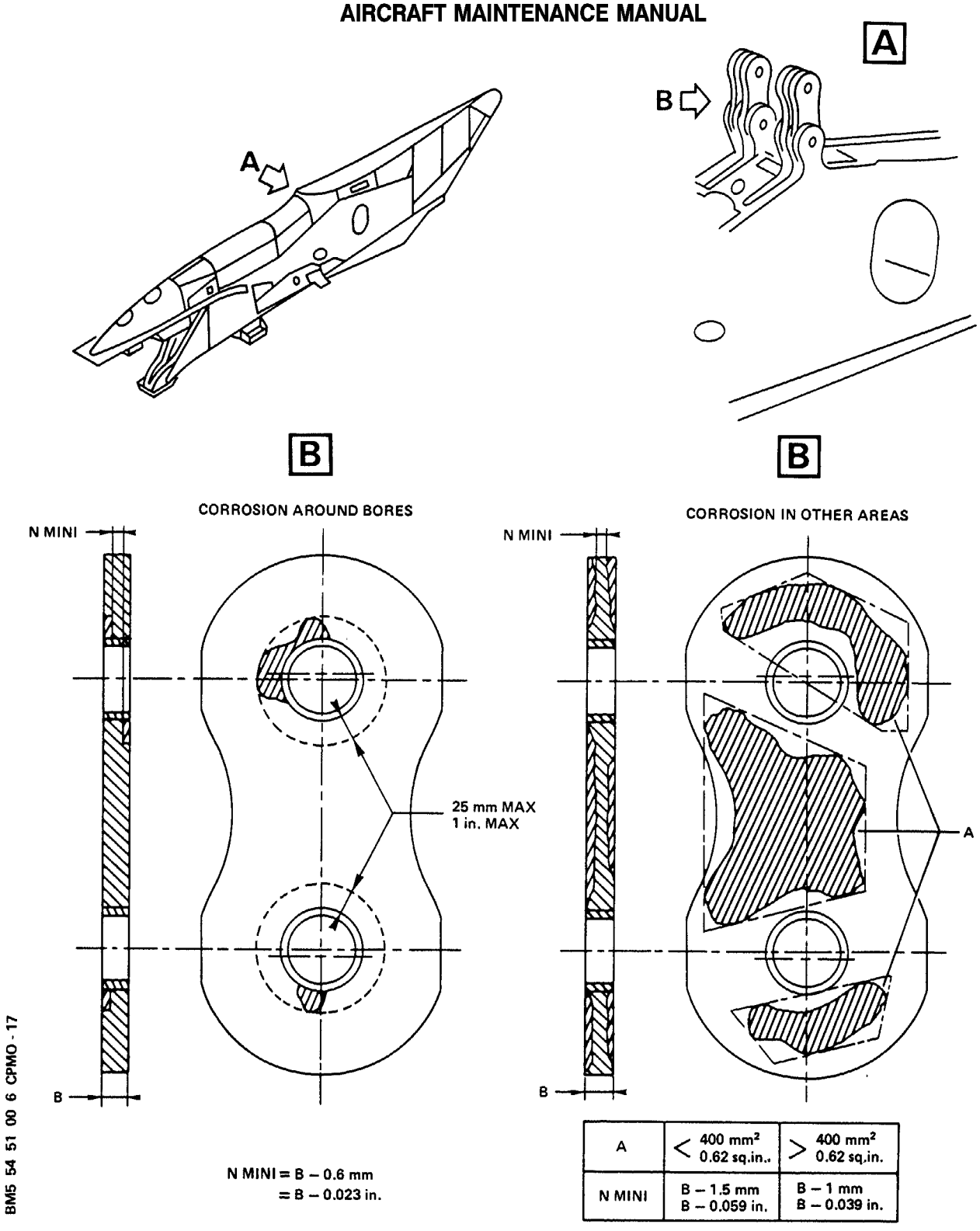
ITEM	DESIGNATION
Referenced Procedure - 54-51-43, P. Block 601	Upper Panel Rods Between RIBS 1 and 8

B. Procedure
(1)Check for presence of upper panel rods (Ref. 54-51-43, P. Block 601).

4. Beams at Engine Attach Fitting - Inspection
NOTE : Carry out the inspection at engine removal.

A. Equipment and Materials

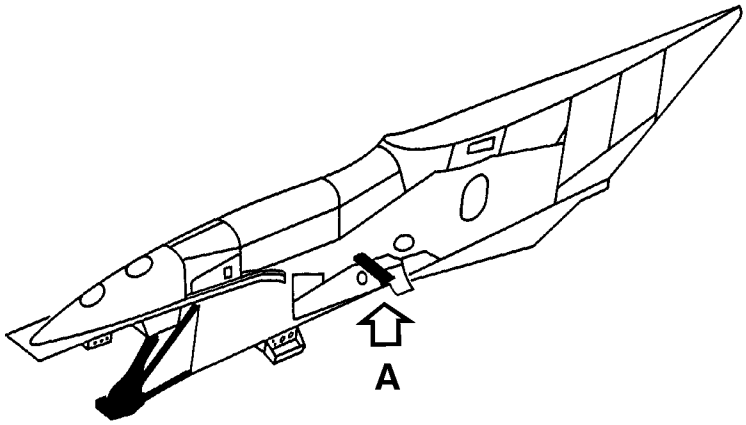
ITEM	DESIGNATION
(1)	Access Platform
Referenced Procedure - 54-51-85, P. Block 601	Aft Attach Fitting

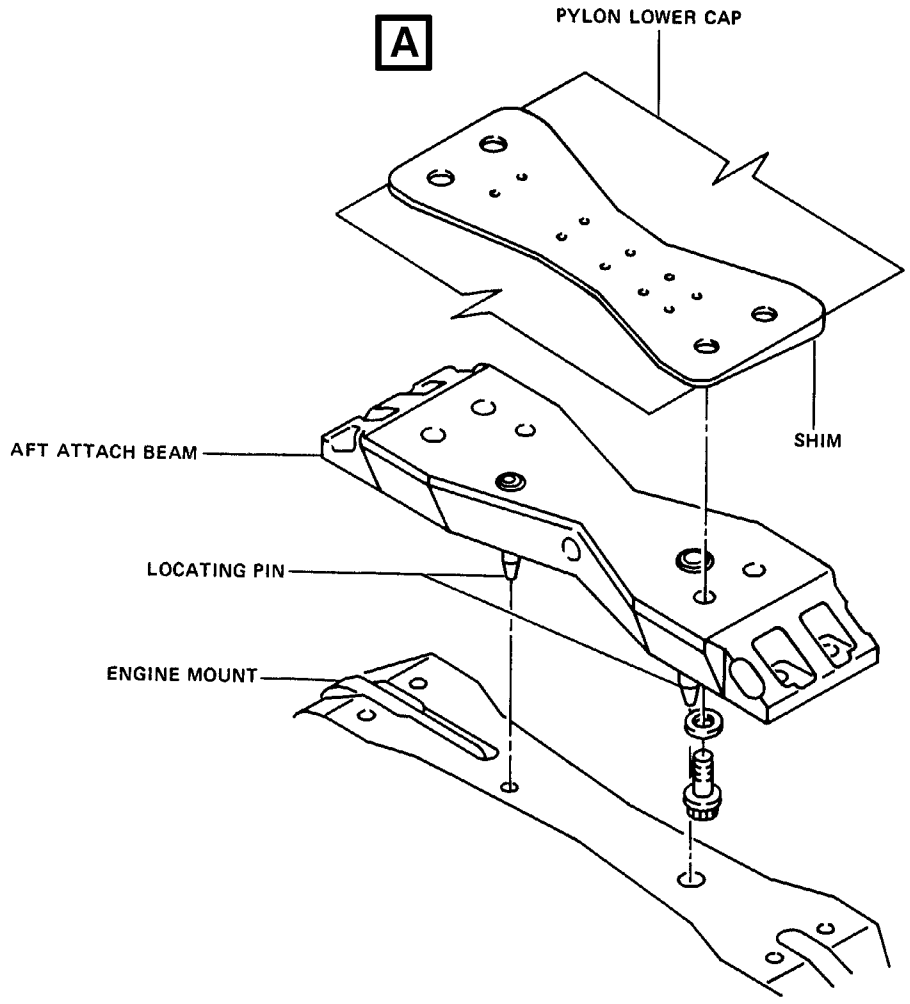


Permissible Corrosion on Shackles
Figure 607

B. Procedure

(1)Inspect the pylon-to-engine aft attach beam (Ref. 54-51-85, P. Block 601).
(Ref. Fig. 608)





BM5 54 51 00 6 LRM0 00

Pylon-to-Engine Aft Attach Beam
Figure 608

1. Approved Repairs of Rod Attachments on Upper Panel
(Ref. Fig. 801)

A. General
Repair of rods (1) attachments on upper panel is performed by reboring rod attachment holes on upper panel and by intalling a bush. Attachment hardware is identical to the original one. The structural rods have to be replaced. For access to zone to be repaired (Ref. 54-41-43, P. Block 401).

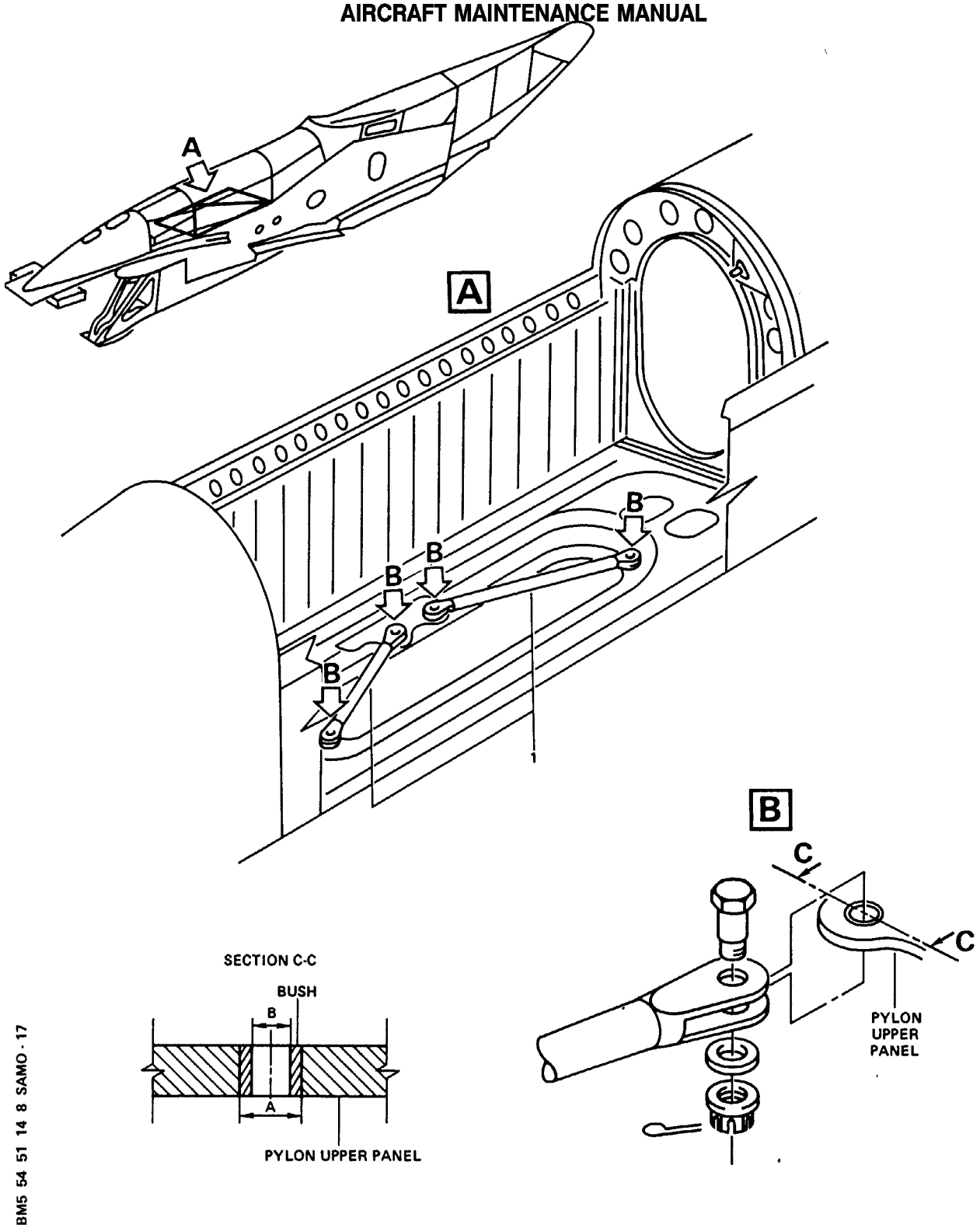
B. Permissible Oversize Reaming Value of Bore A in Upper Panel

	NOMINAL DIA. mm (in.)	TOLERANCE mm (in.)
ORIGINAL VALUE	Between 12.684 and 12.714 mm (0.4993 and 0.5005 in.)	
REPAIR	15 (0.5905)	H7 : +0 (+0) +0.018 (+0.0007)

C. Bush Outside Diameter Values

	NOMINAL DIA. mm (in.)	TOLERANCE mm (in.)
ORIGINAL VALUE	No bush originally installed	
REPAIR	15 (0.5905)	P6 : +0.029 (0.0011) +0.018 (0.0007)

D. Bush Inside Diameter Values (B)
After press fitting of bush, bush internal bore must be reamed to between 12.7 and 12.715 mm (0.5000 in. and 0.5006 in.).
R (The material of the bush is stainless steel EZ6 CNU 15-05 or
R Z8 CND 17-04).



Rod Attachments on Upper Panel After Repair
Figure 801

1. Approved Repairs of Rod Attachments on Upper Panel
(Ref. Fig. 801)

A. General
Repair of rods (1) attachments on upper panel is performed by reboring rod attachment holes on upper panel and by intalling a bush. Attachment hardware is identical to the original one. The structural rods have to be replaced.

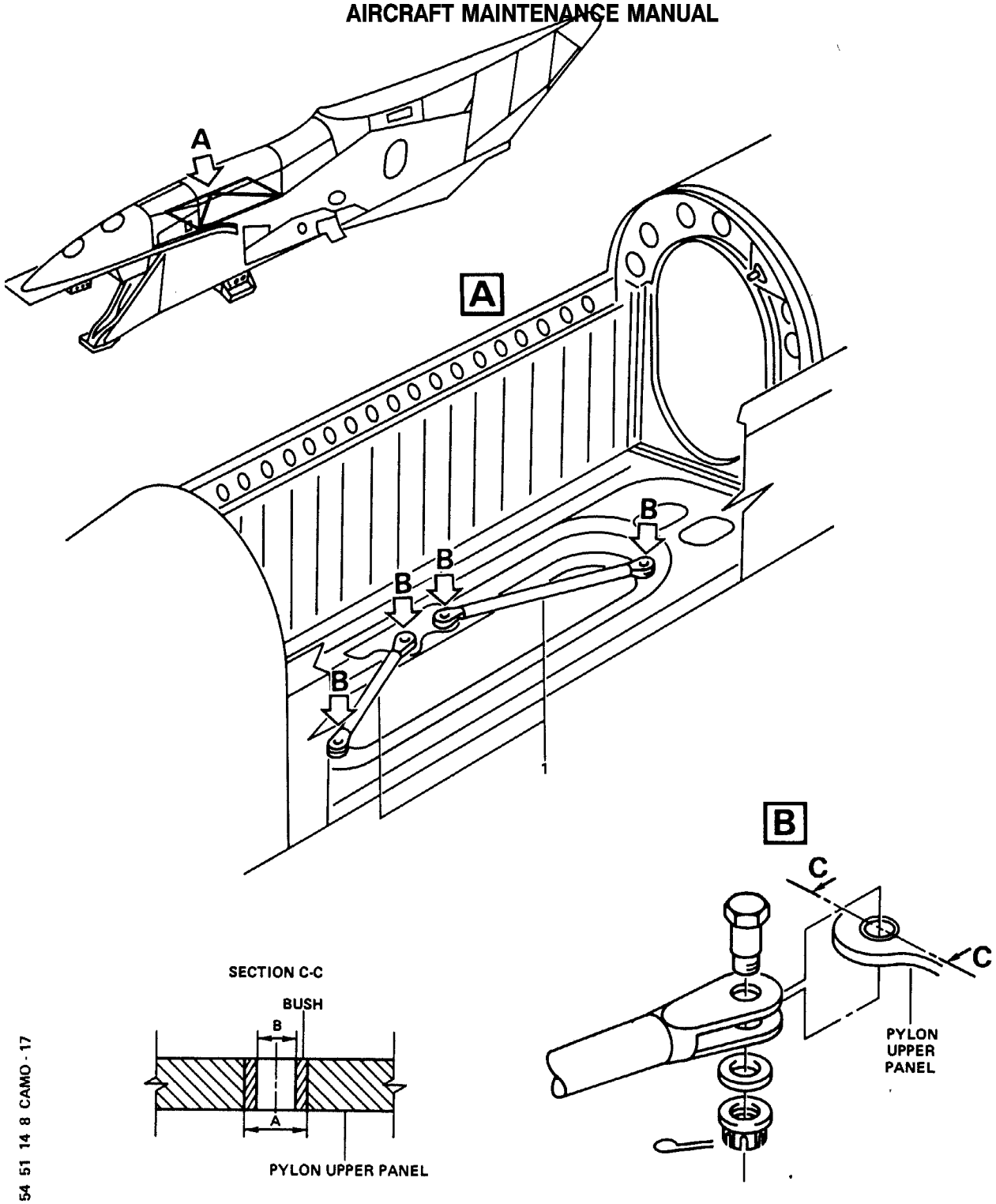
B. Permissible Oversize Reaming Value of Bore A in Upper Panel

	NOMINAL DIA. mm (in.)	TOLERANCE mm (in.)
ORIGINAL VALUE	Between 12.684 and 12.714 mm (0.4993 and 0.5005 in.)	
REPAIR	15 (0.5905)	H7 : +0 (+0) +0.018 (+0.0007)

C. Bush Outside Diameter Values

	NOMINAL DIA. mm (in.)	TOLERANCE mm (in.)
ORIGINAL VALUE	No bush originally installed	
REPAIR	15 (0.5905)	P6 : +0.029 (0.0011) +0.018 (0.0007)

D. Bush Inside Diameter Values (B)
After press fitting of bush, bush internal bore must be reamed to between 12.7 and 12.715 mm (0.5000 in. and 0.5006 in.).
(The material of the bush is stainless steel EZ6 CNU 15-05 or Z8 CND 17-04).



Rod Attachments on Upper Panel After Repair
Figure 801

1. General
(Ref. Fig. 801)
The following procedure deals with touching up of finishes on engine pylon main frame with polyurethane paints, Material Nos. 16-001 and 16-018.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
B.	Abrasive Pad, Scotch Brite Type
C. Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
D. Materiel No. 16-001	Structure Paints (Ref. 20-31-00)
E. Material No. 16-004	Structure Paints (Ref. 20-31-00)
F. Materiel No. 16-018	Structure Paints (Ref. 20-31-00)
Reference Procedures	
- 51-23-10, P. Block 1	Paint Coatings
- 51-23-20, P. Block 1	Special Coatings

3. Paint Coating Repair of Side Panels With Silicone Paint

R NOTE : This procedure is applicable to the external side of panels in
R non-significant damage areas.

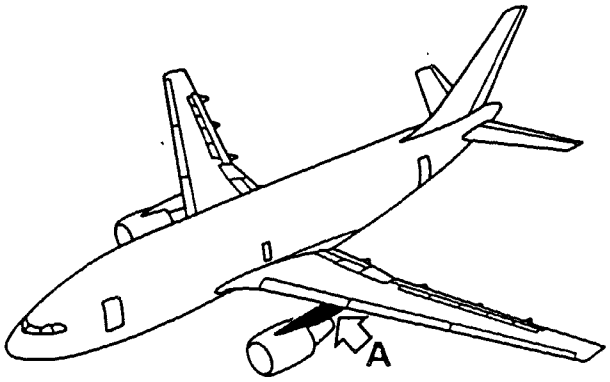
CAUTION : THIS PROCEDURE IS TO BE REPLACED BY PROCEDURE DESCRIBED IN PARAGRAPH 4 (WHATEVER THE SIZE OF DAMAGED AREA) IF SIDE PANEL HAS ALREADY BEEN PAINTED ENTIRELY WITH POLYURETHANE PAINT, MATERIALS
R No. 16-001 AND 16-018 (procedure of paragraph 4.).

NOTE : As material No. 16-004 is a silicone paint, adherence with the nearest paint can be defective if special precautions are not taken in order to avoid silicone coming into contact with adjacent areas.

A. Job Set-Up
(1)Position pylon access platform.
(2)Protect areas adjacent to repair area.

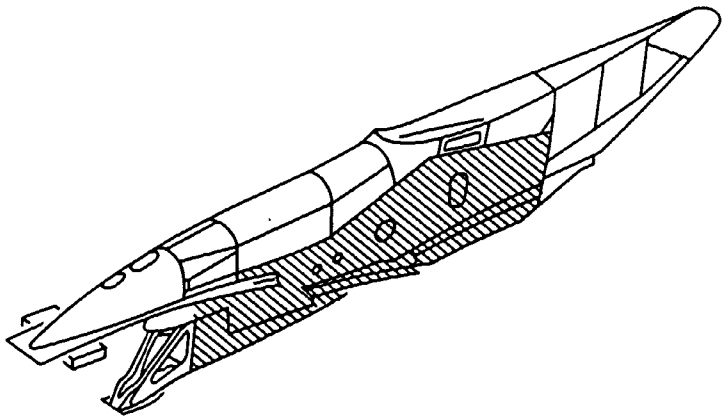
R B. Paint Coating Repair with Material No. 16-004
(1)Bare metal using a dry abrasive pad.
(2)Degrease using solvent Material No. 11-003.
(3)Apply paint, Material No. 16-004 (Ref. 51-23-20, P. Block 1)
(4)Pre-dry during 1 hour, at 20°C.
(5)Oven-dry during 1 hour,at 170°C.
NOTE : If over-drying cannot be performed, heat repaired areas using infra-red rays or hot air, during at least 12 hours at 70°C.

C. Close-Up
(1)Remove protective devices placed over areas adjacent to repaired surfaces.
(2)Remove access platforms.



A

RH PYLON LATERAL PANELS
LH PYLON



PAINT COATING REPAIR AREAS

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Paint Coating Repair Areas
Figure 801

4. Paint Coating Repair of Side Panels with Polyurethane Paint

R NOTE : This procedure is applicable to the external side of panels in
R significant damage areas.

A. Job Set-Up
(1)Install access platforms.
(2)Protect the area surrounding the surface to be repaired.

B. Paint Coating with Polyurethane Paints Material Nos. 16-001 and 16-018
(1)Scrape the whole surface of panel using a dry abrasive pad to remove paint.
NOTE : In the case of panels entirely painted with polyurethane paint only strip the surface to be painted.
R (2)Bare metal using a dry abrasive pad.
R (3)Degrease using Material No. 11-003.
R (4)Carry out a water break test after stripping operation. The film of water covering the surface must be of an even thickness and without breaks.
R (5)Dry the panel.
R (6)Apply a coat of polyurethane primer No. 16-001 (Ref. 51-23-10, P. Block 1).
R (7)Apply a coat of polyurethane top coat No. 16-018 (Ref. 51-23-10, P. Block 1).

C. Close-Up
(1)Remove protective devices placed over areas adjacent to repaired surface.
(2)Remove pylon access platform.

SIDE PANELS - APPROVED REPAIRS

1. General

The following procedure deals with touching up of finishes on engine pylon main frame with polyurethane paints, Material Nos. 16-001 and 16-018.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
B.	Abrasive Pad, Scotch Brite Type
C. Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
D. Material No. 16-001	Structure Paints (Ref. 20-31-00)
E. Material No. 16-018	Structure Paints (Ref. 20-31-00)
F.	Warning Notices
Referenced Procedures	
- 51-23-10, P. Block 1	Paint Coatings
- 71-13-00, P. Block 301	Cowl Doors

3. Paint Coating Repair of Side Panels

(Ref. Fig. 801)

A. Job Set-Up

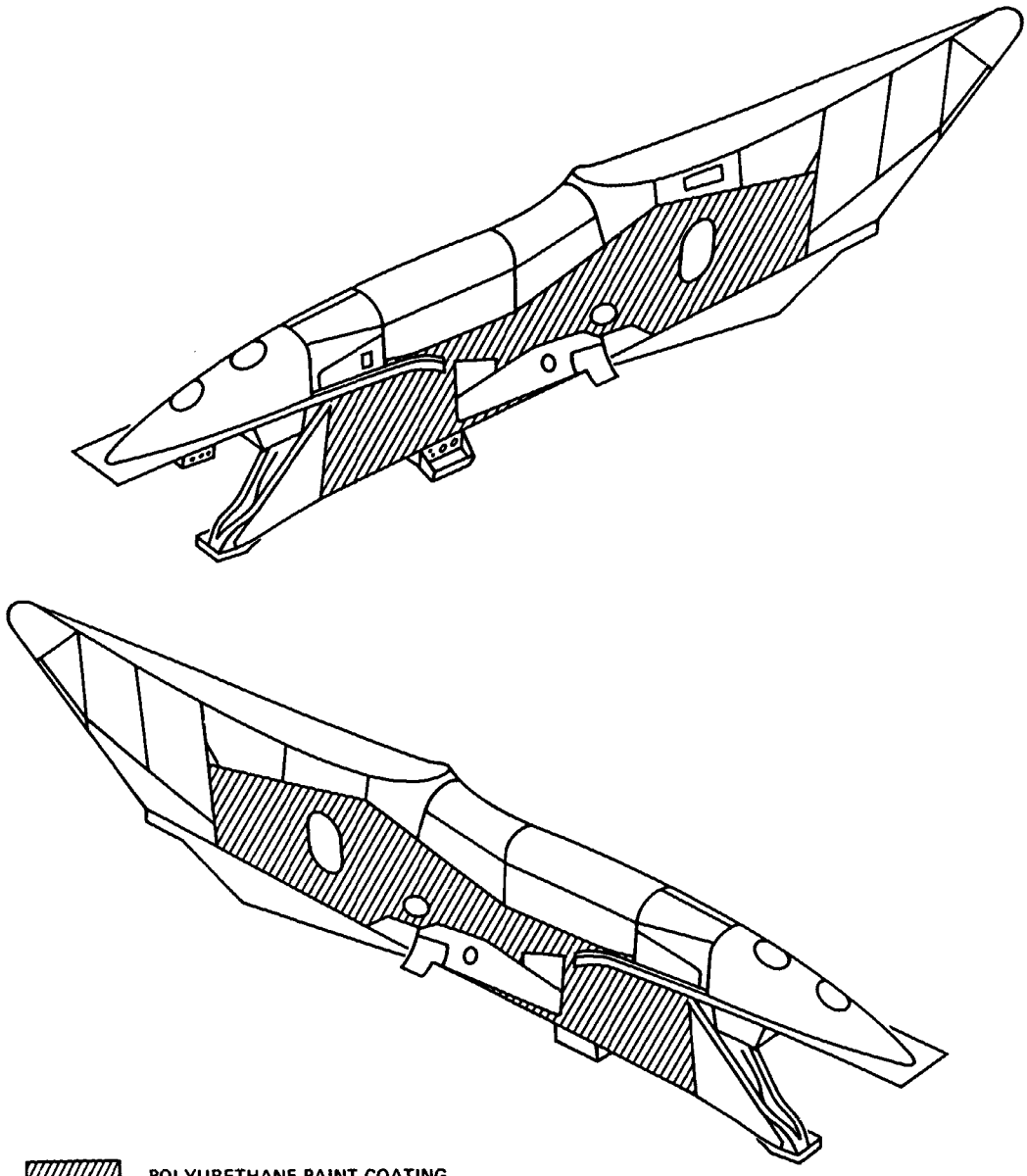
(1) In flight compartment on center pedestal, install a warning notice on flap and slat control lever to prevent inadvertent operation.
(2) If necessary, open cowl doors (Ref. 71-13-00, P. Block 301).
(3) Install access platforms.
(4) Protect the area surrounding the surface to be repaired.

B. Paint Coating with Polyurethane Paints Material Nos. 16-001 and 16-018

(1) Bare metal using a dry abrasive pad.
(2) Degrease using solvent Material No. 11-003.
(3) Carry out a water break test after stripping operation. The film of water covering the surface must be of an even thickness and without breaks.
(4) Dry the panel.
(5) Apply a coat of polyurethane primer No. 16-001 (Ref. 51-23-10, P. Block 1).
(6) Apply a coat of polyurethane top coat No. 16-018 (Ref. 51-23-10, P. Block 1).

C. Close-Up

(1) Remove protective devices placed over areas adjacent to repaired surface.
(2) Remove pylon access platform.
(3) Close cowl doors.
(4) In flight compartment remove warning notice from flap and slat control/ lever.



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Paint Coating Repair Areas
Figure 801

UPPER PANEL RODS BETWEEN RIBS 1 AND 8 - REMOVAL/INSTALLATION

1. Equipment and Materials

ITEM	DESIGNATION
A.	Cotter Pins
Referenced Procedures	
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-14, P. Block 801	Upper Panel Between RIBS 1 and 8

2. Procedure

NOTE : Procedure is identical for each engine pylon.

A. Job Set-Up

(1)Remove bleed air precooler (Ref. 36-11-15, P. Block 401).

B. Removal

CAUTION : BLANK OFF BLEED AIR PRECOOLER DUCT ASSEMBLY UNDER RODS (1) TO PREVENT PARTS FROM FALLING INTO DUCTS.

NOTE : Procedure is identical for each rod (1).

(1)Install blanking caps on bleed air precooler duct assembly and on precooler outlet duct.

(2)Remove cotter pin (5) and discard.

(3)While holding rod (1), remove nuts (4), washers (3) and bolts (2).

(4)Remove rod.

C. Visual Inspection

(1)Clean parts to be inspected.

(2)Visually inspect rods (1).

R (3)Check condition of pylon upper panel bores and measure the diameter of
R the bore in the rod attachment and in the upper panel.
R - If the diameter is less than 12.8 mm (0.504 in.), the damage (wear) is
R allowable.
R - If the diameter of the rod attachment bore is greater than 12.8 mm
R (0.504 in.), replace the rod.
R - If the diameter of the upper panel bore is greater than 12.8 mm
R (0.504 in.), apply the repair procedure (Ref. 54-51-14, P. Block 801).

(4)Check condition of attach hardware.

D. Installation

(1)Position rods (1).

(2)Install bolts (2), washers (3) and nuts (4).

(3)Tighten nuts (4) and safety with new cotter pins (5).

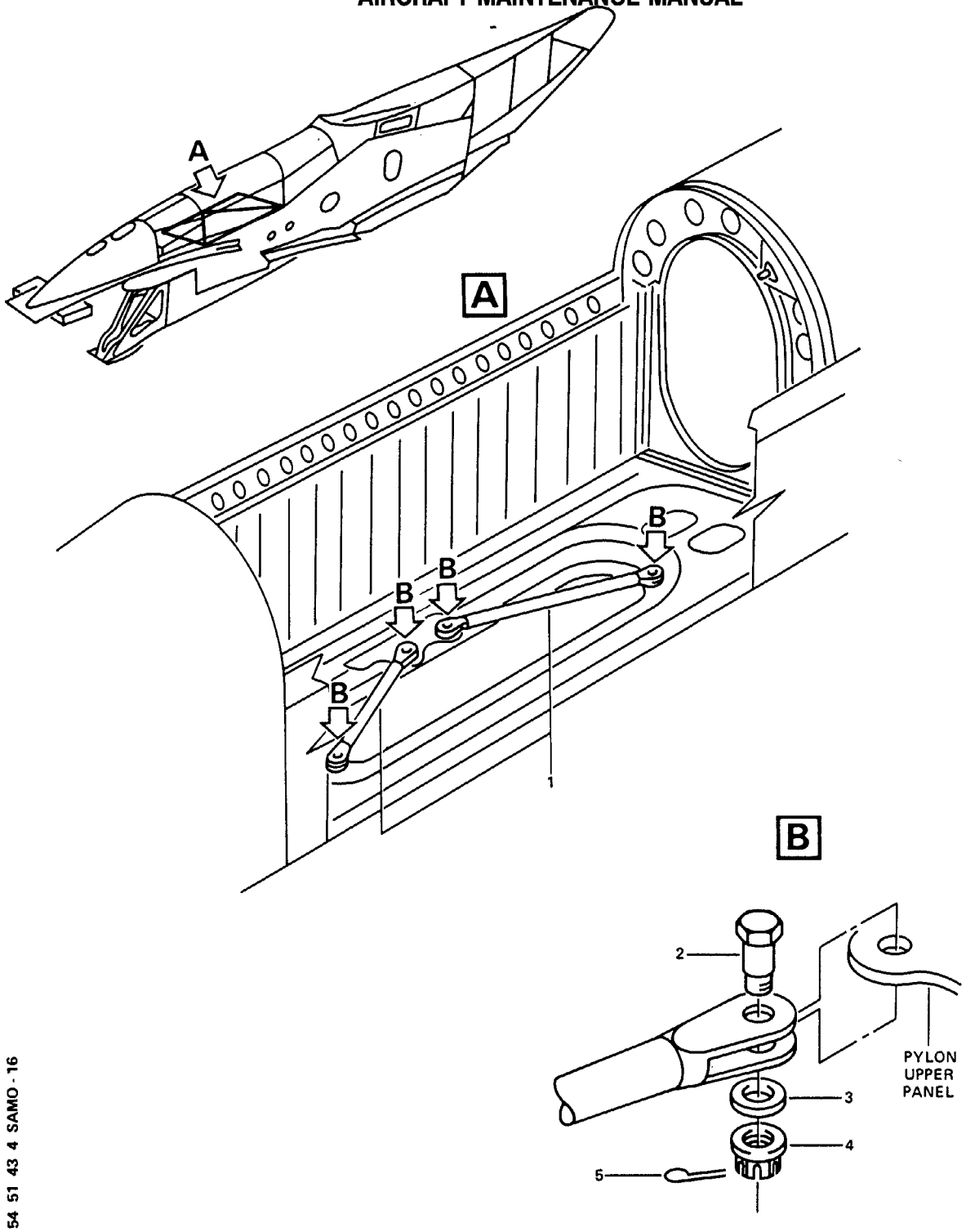
(4)Remove blanking caps from bleed air precooler duct assembly and from precooler outlet duct.

E. Close-Up

CAUTION : MAKE CERTAIN THAT DUCTS ARE NOT BLANKED OFF.

(1)Install bleed air precooler (Ref. 36-11-15, P. Block 401).

(Ref. Fig. 401)



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Upper Panel Rods Between RIBS 1 and 8
Figure 401

UPPER PANEL RODS BETWEEN RIBS 1 AND 8 - REMOVAL/INSTALLATION

1. Equipment and Materials

ITEM	DESIGNATION
A.	Cotter Pins
Referenced Procedures	
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-14, P. Block 801	Upper Panel Between RIBS 1 and 8

2. Procedure

NOTE : Procedure is identical for each engine pylon.

A. Job Set-Up
(1)Remove bleed air precooler (Ref. 36-11-15, P. Block 401).

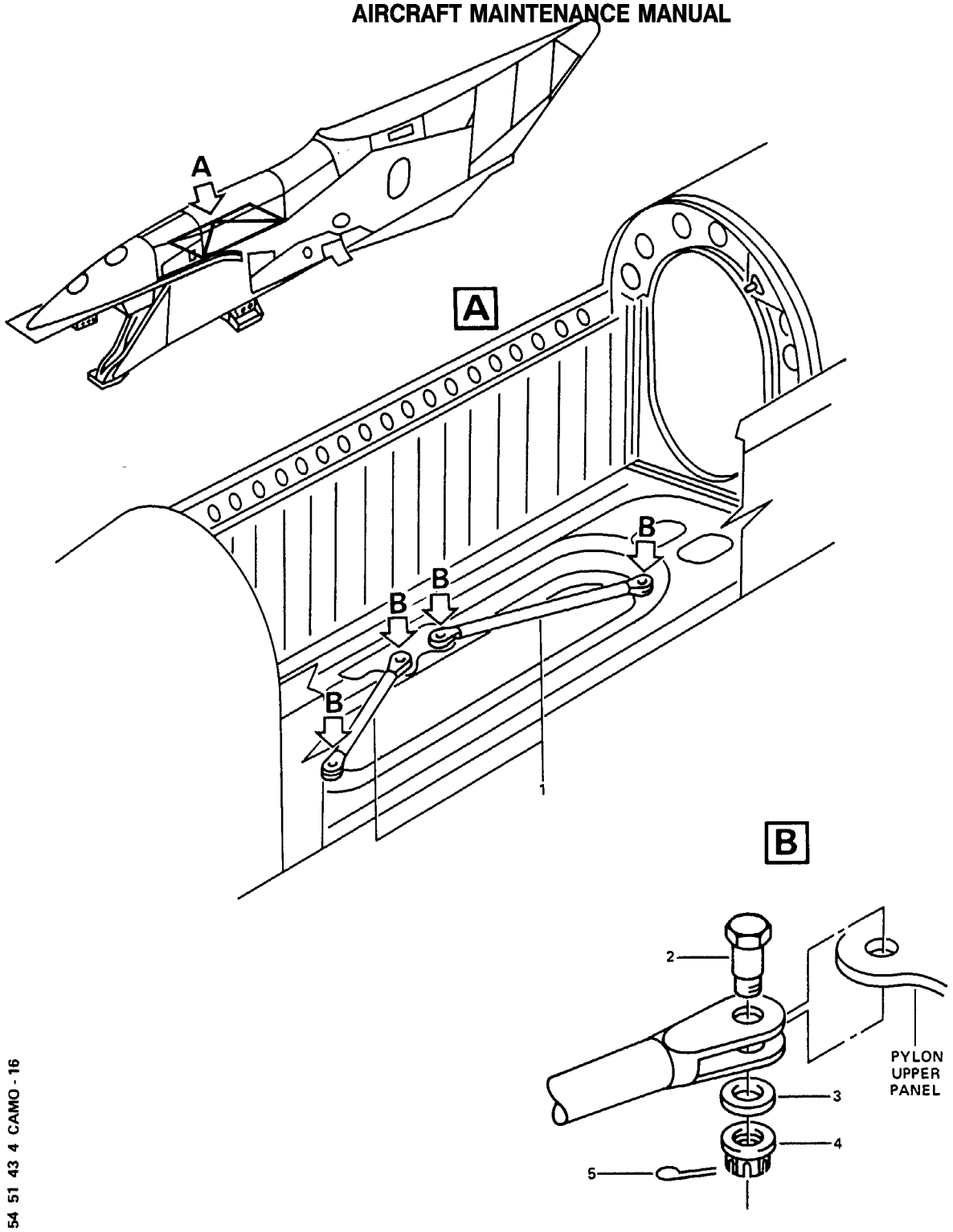
B. Removal
(Ref. Fig. 401)
CAUTION : BLANK OFF BLEED AIR PRECOOLER DUCT ASSEMBLY UNDER RODS (1) TO PREVENT PARTS FROM FALLING INTO DUCTS.
NOTE : Procedure is identical for each rod (1).
(1)Install blanking caps on bleed air precooler duct assembly and on precooler outlet duct.
(2)Remove cotter pin (5) and discard.
(3)While holding rod (1), remove nuts (4), washers (3) and bolts (2).
(4)Remove rod.

C. Visual Inspection
(1)Clean parts to be inspected.
(2)Visually inspect rods (1).
(3)Check condition of pylon upper panel bores and measure the diameter of the bore in the rod attachment and in the upper panel.
- If the diameter is less than 12.8 mm (0.504 in.) the damage (wear) is allowable.
- If the diameter of the rod attachment bore is greater than 12.8 mm (0.504 in.), replace the rod.
- If the diameter of the upper panel bore is greater than 12.8 mm (0.504 in.), apply the repair procedure (Ref. 54-51-14, P. Block 801).

(4)Check condition of attach hardware.

D. Installation
(1)Position rods (1).
(2)Install bolts (2), washers (3) and nuts (4).
(3)Tighten nuts (4) and safety with new cotter pins (5).
(4)Remove blanking caps from bleed air precooler duct assembly and from precooler outlet duct.

E. Close-Up
CAUTION : MAKE CERTAIN THAT DUCTS ARE NOT BLANKED OFF.
(1)Install bleed air precooler (Ref. 36-11-15, P. Block 401).



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Upper Panel Rods Between RIGS 1 and 8
Figure 401

UPPER PANEL RODS BETWEEN RIBS 1 AND 8 - INSPECTION/CHECK

1. Reason for the Job

A. Check for presence of rods located under precooler, following maintenance jobs in this area.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
B.	Pin dia. 2.5 to 3 mm (0.098 to 0.118 in.) approx. length 126 mm (4.96 in.)
C.	Warning Notice

3. Procedure

R **ON A/C 101-200,

R (Ref. Fig. 601)

R **ON A/C 001-100,

(Ref. Fig. 602)

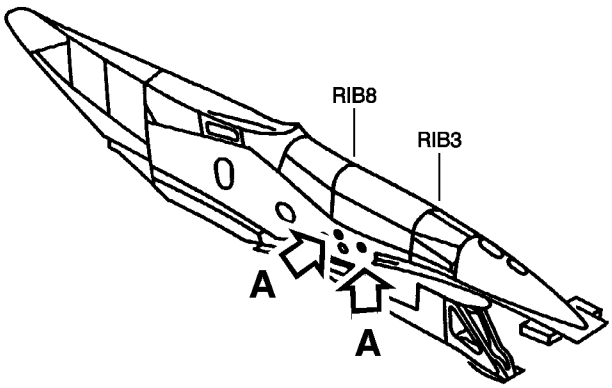
R **ON A/C ALL

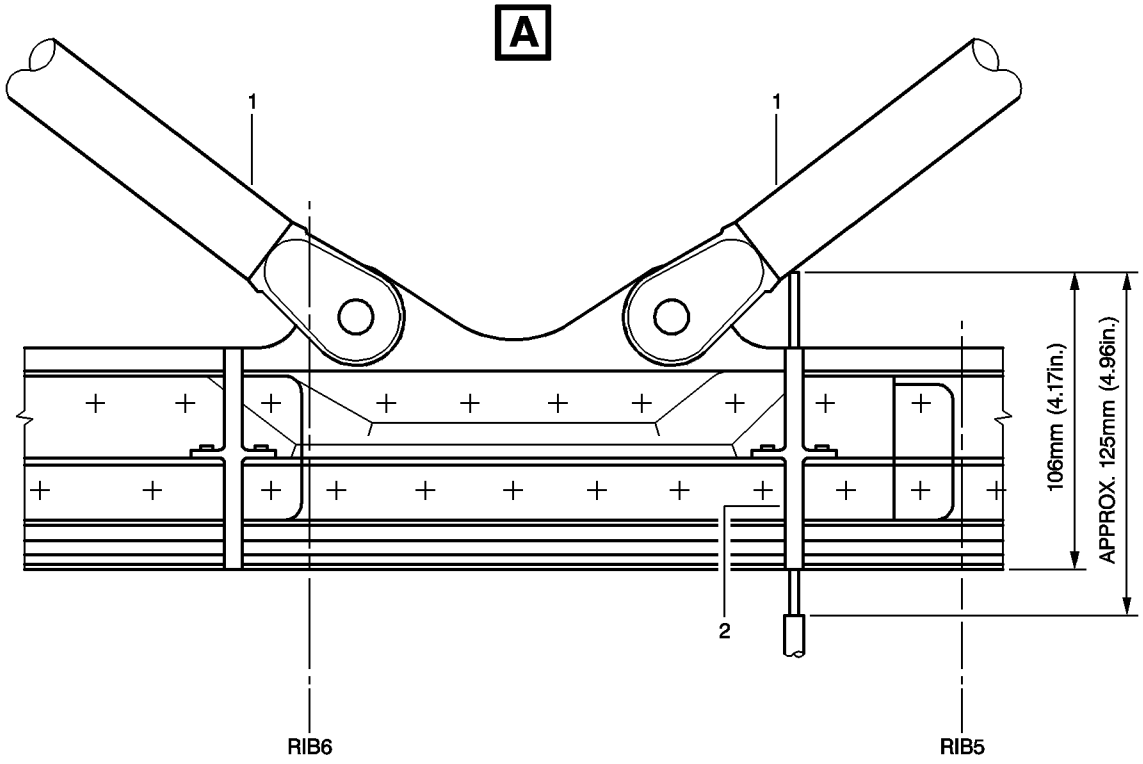
NOTE : Procedure is identical for each engine pylon.

A. Job Set-Up
(1)Position access platform at engine pylon (pylon right side).
(2)Make certain that slats are retracted and place a warning notice on flap and slat control lever in flight compartment prohibiting its operation.

B. Check
(1)On each engine pylon right side check for presence of each rod (1) by inserting pin (2) into the orifice provided for this purpose. The presence of each rod (1) must be detected when a length of 106 mm (1.173 in.) of the pin (2) has been inserted.
(2)Remove pin (2).

C. Close-Up
(1)Remove engine pylon access platform.
(2)Remove warning notice.





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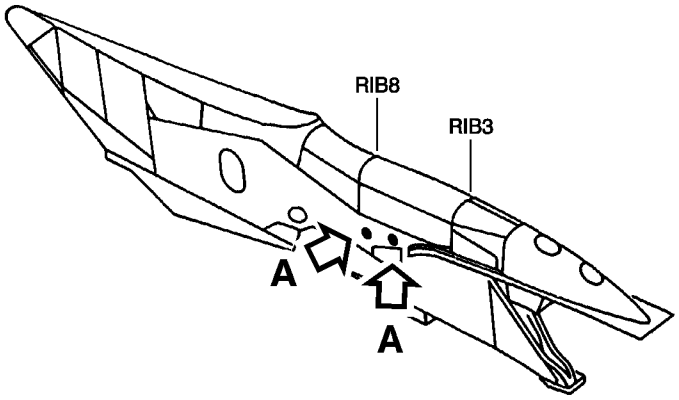
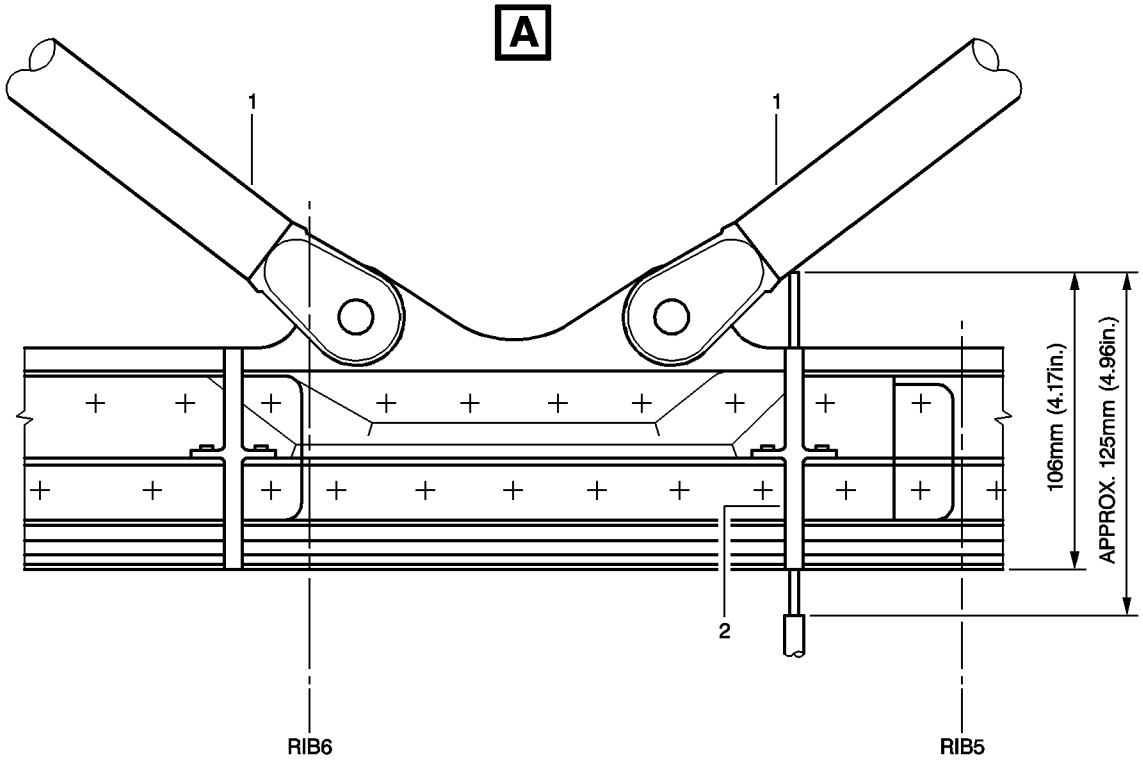
Rods - Check
Figure 601





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Rods - Check
Figure 602

1. Removal/Installation of Fail-Safe Bolts and Sleeves and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)
(2)	Jack - 10 Tonnes (23000 lbf.), with Extension
(3)98A54403005000	Dummy Shackles
(4)98A54403006000	Dummy Sleeve
R (5)98A54403024000	Adapter - Dynamometric N1 for Inspection/Check
(6)	Torque Wrench
(7)	Circuit Breaker Safety Clips
(8)65303A4351M000	Pin Wrench
(9)	Key Washer
10)98A54003022000	Extractors - Sleeve, RIB12/RIB18
11)98A54003084000	Inserting Tool - Sleeve, RIB12/RIB18
12)65375AB351M000	Special Wrench
13)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
14)Material No. 04-004A	Common Greases (Ref. 20-31-00)
15)Material No. 04-007	Common Greases (Ref. 20-31-00)
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance
- 24-41-00, P. Block 301	AC External Power Control
- 27-80-00, P. Block 301	Lift Augmenting (Slats and Krueger Flaps)
- 29-10-00, P. Block 301	Main
- 29-21-00, P. Block 301	Green Auxiliary Power
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-21, P. Block 401	Temperature Control Sensor 53HA (54HA)
- 36-11-23, P. Block 401	High Stage Pressure Sensor 47HA (48HA)
- 36-21-13, P. Block 401	Precooler Outlet Temperature Sensor
- 54-51-72, P. Block 601	Forward Attach Fitting (RIB12)
R - 54-51-72, P. Block 801	Forward Attach Fitting (RIB12)
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Engine Cowl Doors

R B. Procedure

R (1)Job set-up

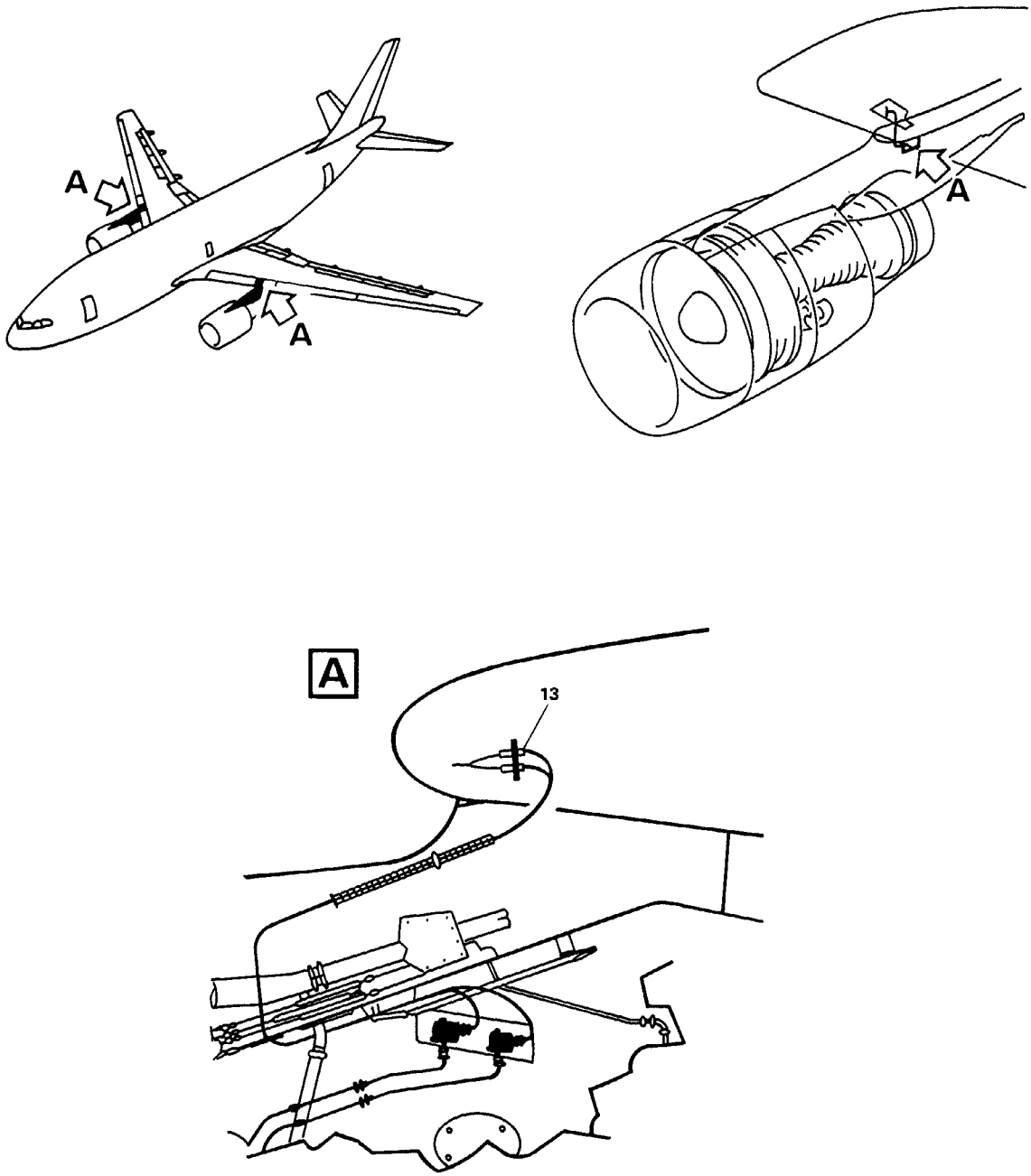
R (a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

R (b)Open, safety and tag the following circuit breakers :

R PANEL	SERVICE	IDENT.	LOCATION
R 21VU	AFS/TCC/SYS 1/28VDC	306/CJ1	102/H 8
R 21VU	AFS/TCC/SYS 1/115VAC	308/CJ1	102/H 9
R 21VU	AFS/TCC/SENSOR	305/CJ1	102/H10
R 21VU	AFS/TCC/SYS 2/115VAC	308/CJ2	102/H11
R 21VU	AFS/TCC/SYS 2/28VDC	306/CJ2	102/H12

R (c)Remove engine (Ref. 71-00-00, P. Block 401).
R (d)Install pylon access platforms.
R (e)Jack-up the aircraft (Ref. 07-11-00, P. Block 1).
R NOTE : It is not necessary to lift the aircraft wheels clear of ground.
R Jacking of the aircraft serves only to prevent reaction of the
R shock absorbers and maintain the pylons at a constant height
R from the ground.
R Make certain that tail jack is still operational after aircraft
R jacking. If not rectify jack height.
R (f)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
R (g)Make certain that electronics racks ventilation is correct.
R (h)By means of the electric pumps, pressurize Green hydraulic system
R (Ref. 29-21-00, P. Block 301).
R (i)Place flap and slat control lever in fifth notch to extend slats
R (Ref. 27-80-00, P. Block 301).
R NOTE : Slats must be extended to gain access to panel 512AT (612AT).
R (j)Depressurize Green hydraulic system (Ref. 29-21-00 or 29-10-00,
R P. Block 301) and de-energize the aircraft electrical network
R (Ref. 24-41-00, P. Block 301).
R (k)Remove the following fillets and skin panels :
R On LH engine pylon : 471AL (472AR)
R On RH engine pylon : 481AL (482AR)
R On LH wing : 512AT
R On RH wing : 612AT.
R (l)Disconnect electrical connectors (13) from high stage pressure sensor
R 47HA (48HA) and install blanking caps.
R (Ref. Fig. 401)
(m)Remove sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21 and
36-21-13, P. Block 401).
(n)Remove air bleed duct located between wing RIB6 and RIB8 and
remove air bleed duct elbow (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 402)
(p)Disconnect connectors at wing-to-pylon junction.
R (q)Remove air bleed duct shield (Ref. Fig. 403).
(r)Install tool 98A54403024000 on pylon forward pyramid and on jack
(Ref. Fig. 404)
R (s)Position jack under pyramid and apply a vertical load as follows :
R - if the engine cowl doors are installed, apply a vertical load of
R between 1400 and 2000 kg (3086 and 4409 lbf),
R - if the engine cowl doors are removed, apply a vertical load of
R between 500 and 700 kg (1124 and 1573 lbf).

(2)Removal
R (Ref. Fig. 405)
WARNING : - CHECK THAT REQUIRED LOAD IS APPLIED BY JACK ON PYLON.
- IF TIME REQUIRED FOR ACCOMPLISHMENT OF THE TASK EXCEEDS
ONE HOUR, IT IS NECESSARY TO INSTALL DUMMY SHACKLES
98A54403005000 AND DUMMY SLEEVES 98A54403006000
(Ref. Fig. 406)
R
NOTE : Procedure is identical for each bolt and sleeve.
(a)Remove and discard cotter pin (11).



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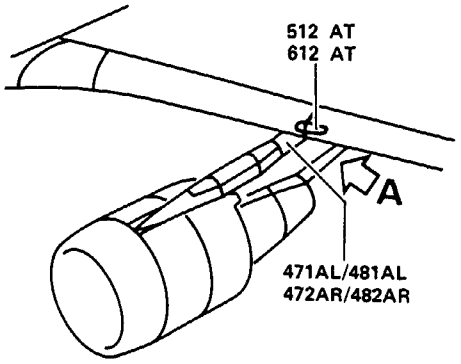
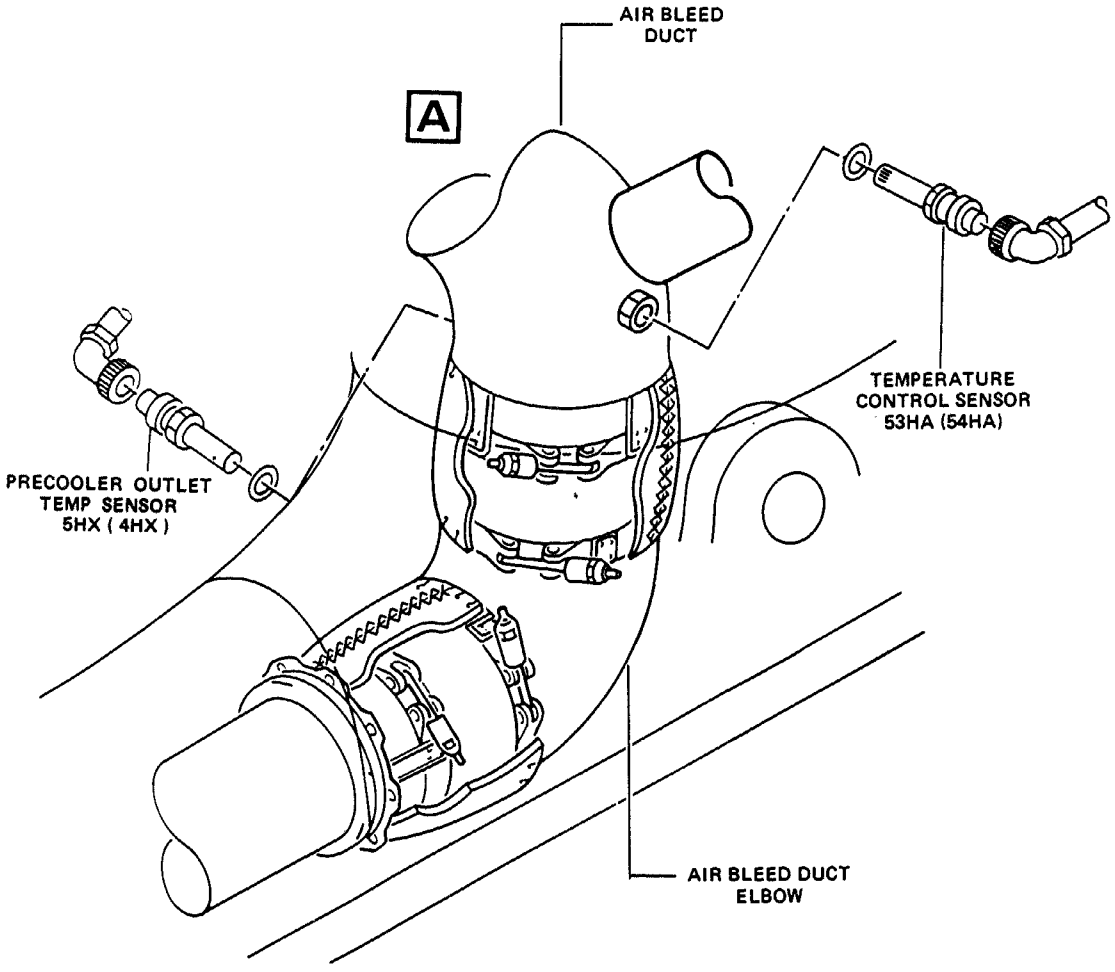
Removal of Pneumatic Lines and Sensors
Figure 401





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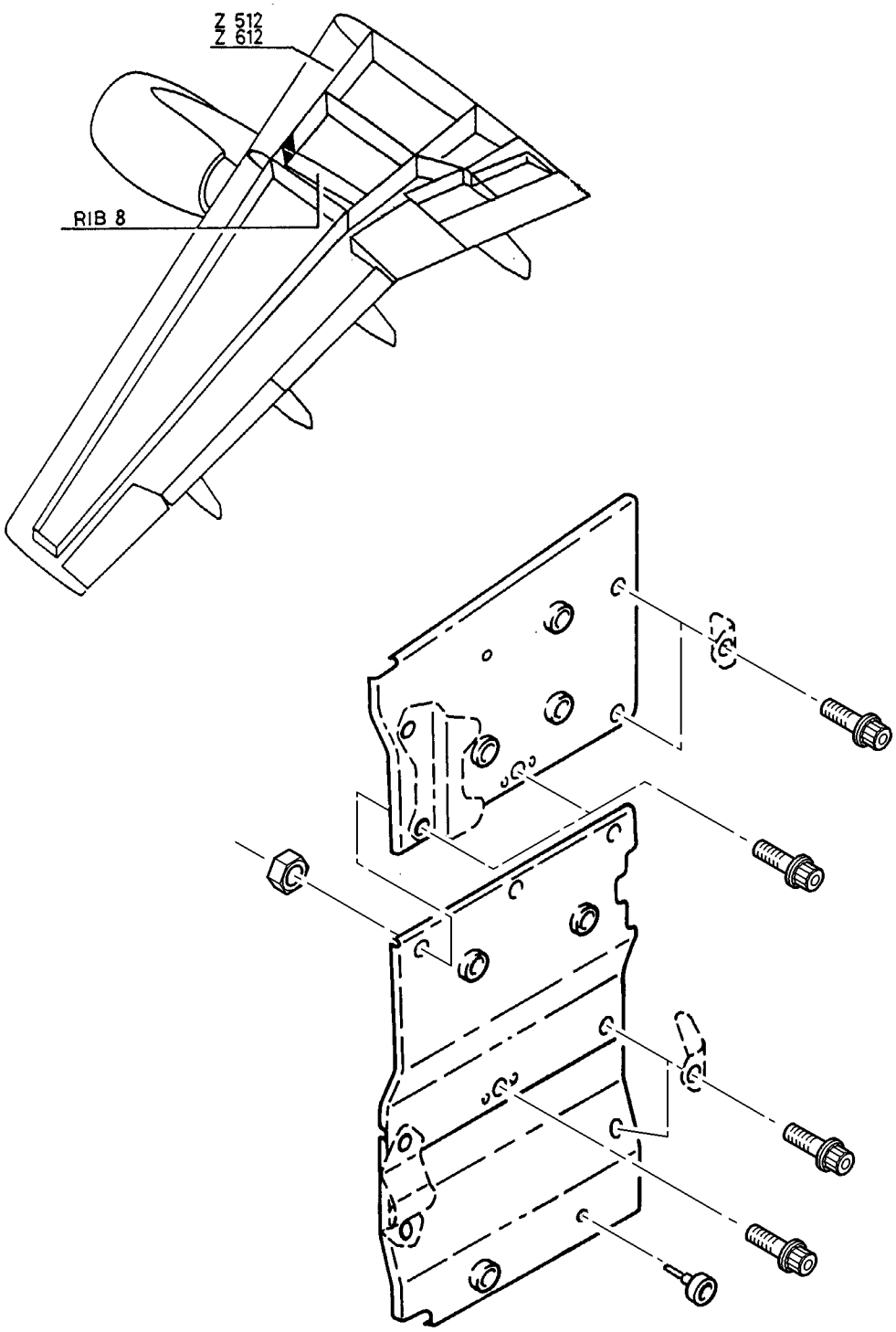
Removal of Air Bleed Duct and Sensors
Figure 402



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Removal of Air Bleed Duct Shield
Figure 403

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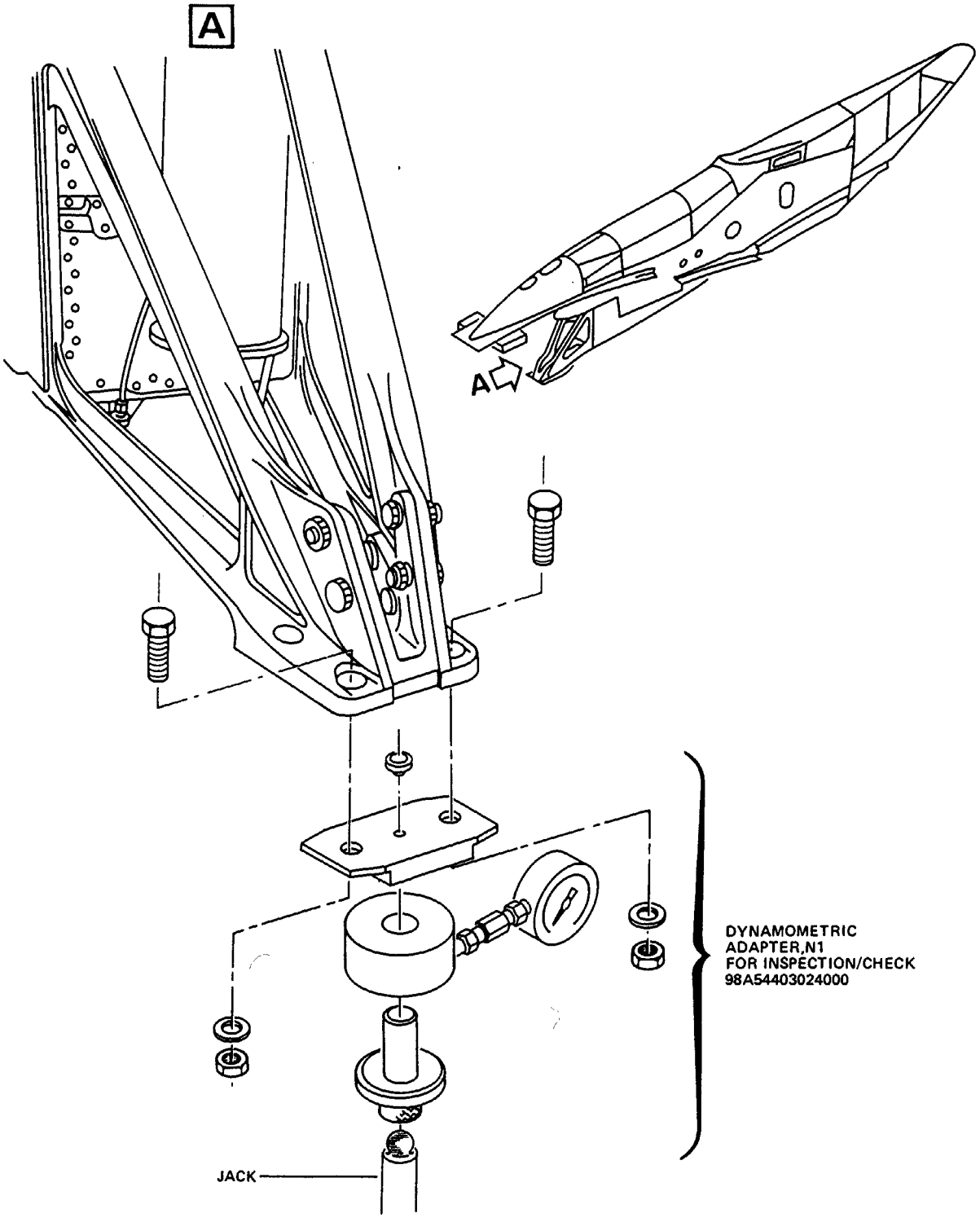
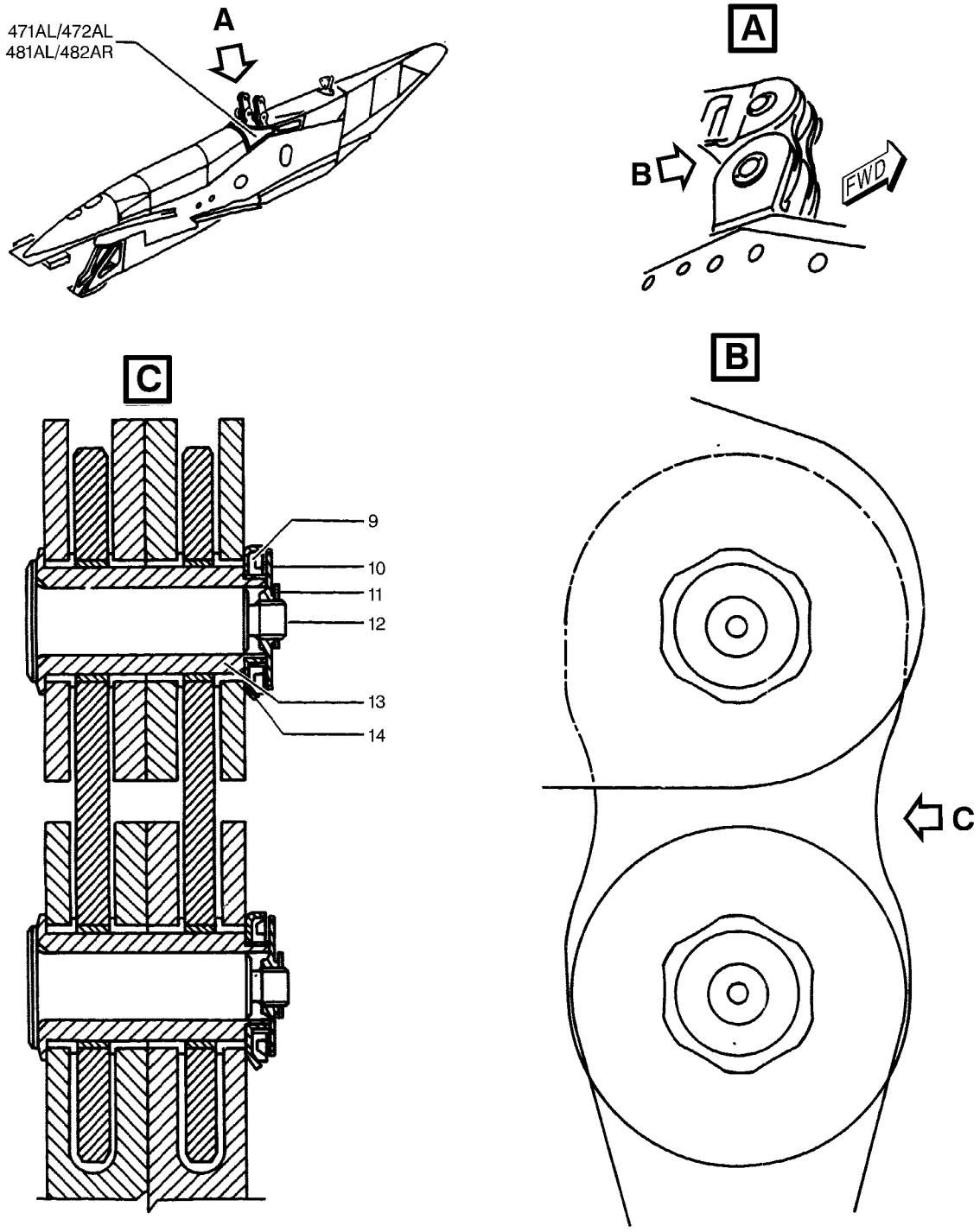


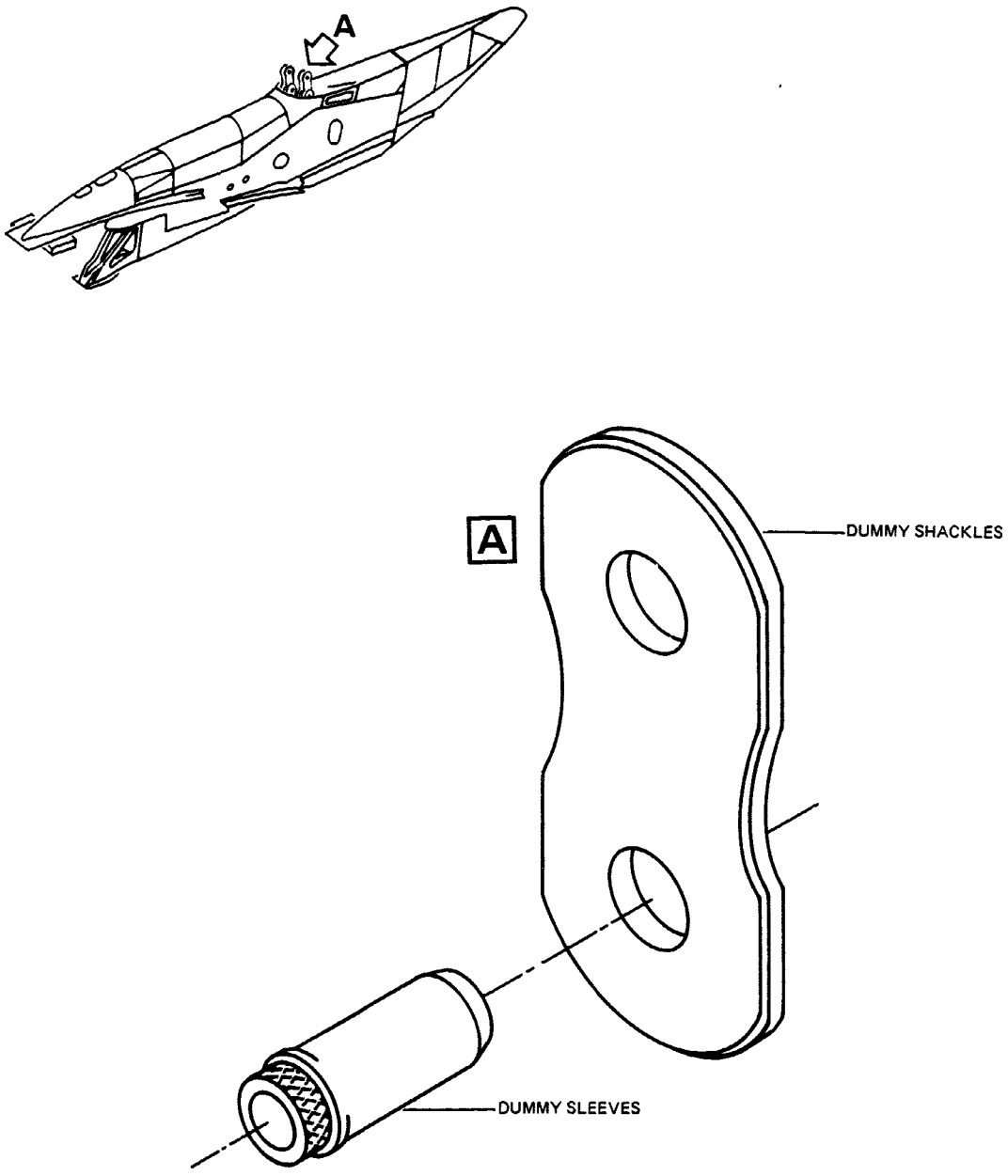
Installation of Dynamometric Adapter Under Pyramid
Figure 404

R



Removal of Fail Safe Bolts and Sleeves and Shackles
Figure 405

R



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Pylon-to-Wing Attachment by Dummy Shackles and Sleeves
Figure 406

(b)Use pin wrench 65303A4351M000 to immobilize bolt (12) and slightly unscrew nut (10) using special wrench 65375AB51M000.
(c)Extract bolt (12) and retain nut (10).
(d)Unsafety nut (9), immobilize sleeve (13) using a thin spanner and remove nut (9) using special wrench 65375AB351M000. Discard key washer (14).
(e)Remove sleeve (13) starting from the lower sleeve using tool 98A54003022000.
NOTE : A slight variation of the force applied by the jack under forward pyramid facilitates sleeve extraction.
R (f)After shackles removal, check on pylon the correct alignment of RIB12
R fitting bushes bores by manually inserting the sleeves into their
R housings.
R If there are difficulties of insertion, repair bushes have to be
R installed (Ref. 54-51-72, P. Block 801).

(3)Checks
(a)Clean bolts, sleeves, shackles, yokes and washers with Material No. 11-003.
(b)Visually inspect :
1 Shackles (Ref. 54-51-72, P. Block 601).
2 Yokes secured to RIB12.
3 Yokes secured to wing.
4 Bolts and nuts.
NOTE : No structural defect or wear trace is permissible.

(4)Installation
R NOTE : The installation procedure is identical for each fail safe bolt and sleeve.
R
(a)Coat spigot and holes of fixed yokes on wing lower surface with Material No. 04-004A.
(b)Install shackles, bolts and sleeves as follows :
NOTE : Install upper fail safe fastener before the lower one.
1 Install shackles into fixed yokes on wing.
2 Coat plain section of sleeves (13) with Material No. 04-004 A and threaded surface with Material No. 04-007.
R 3 Insert sleeve into hole using tool 98A54003084000.
NOTE : A slight variation of the force applied under forward pyramid facilitates lower sleeve installation.
4 Install a new key washer (14).
5 Screw nut (9) without tightening until against sleeve (13).
6 Immobilize sleeve (13) and TORQUE nut (9) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench.
7 Safety nut (9) by bending one tab of the key washer (14).
8 Coat threading of bolt (12) with Material No. 04-007 and insert bolt
R (12) into sleeve (13).
9 Immobilize bolt (12) using pin wrench 65303AB351M000 and tighten nut (10).
10 TORQUE nut (10) to between 4 and 5 m.daN (29.5 and 36.8 lbf. ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (11).

(c)Install electrical cables, connect connectors at wing-to-pylon junction. Attach cables with clamp blocks.

R (5)Close-up

R (a)Install air bleed duct shield (Ref. Fig. 403).

(b)Install air bleed duct elbow and air bleed duct located between wing RIB6 and RIB8 (Ref. 36-11-00, P. Block 401). (Ref. Fig. 402)

(c)Install sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21, and 36-21-13, P. Block 401) (Ref. Fig. 402).

R (d)Remove plugs and connect electrical connectors (13) from high stage
R pressure sensors 47HA (48HA). (Ref. Fig. 401)

R (e)Remove tool 98A54403024000 from jack and pylon.

R (f)Install engine (Ref. 71-00-00, P. Block 401).

R (g)Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).

R (h)Close engine cowls (Ref. 71-13-00, P. Block 301).

R (i)Install the following fillets and skin panels

R - LH engine pylon 471AL (472AR)

R - RH engine pylon 481AL (482AR)

R - LH wing 512AT

R - RH wing 612AT.

R (j)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).

R (k)Make certain that electronics racks ventilation is correct.

R (l)By means of the electric pumps, pressurize Green hydraulic system
R (Ref. 29-21-00, P. Block 301).

R (m)Bring flap and slat control lever in position 1 (FLAPS 0°, SLATS 0°).

R (n)Depressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).

R (p)De-energize the aircraft electrical network (Ref. 24-41-00,
R P. Block 301).

R (q)Remove safety clips and tags and close circuit breakers.

R (r)Remove access platforms.

FORWARD ATTACH FITTING (RIB12) - REMOVAL/INSTALLATION

1. Removal/Installation of Fail-Safe Bolts and Sleeves and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)
(2)	Jack - 10 Tonnes (23000 lbf.), with Extension
(3)98A54403005000	Dummy Shackles
(4)98A54403006000	Dummy Sleeve
(5)98A54403024000	Adapter - Dynamometric N1 for Inspection/Check
(6)	Torque Wrench
(7)	Circuit Breaker Safety Clips
(8)65303A4351M000	Pin Wrench
(9)	Key Washer
10)98A54003022000	Extractors - Sleeve, RIB12/RIB18
11)98A54003084000	Inserting Tool - Sleeve, RIB12/RIB18
12)65375AB351M000	Special Wrench
13)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
14)Material No. 04-004A	Common Greases (Ref. 20-31-00)
15)Material No. 04-007	Common Greases (Ref. 20-31-00)
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance
- 24-41-00, P. Block 301	AC External Power Control
- 27-80-00, P. Block 301	Lift Augmenting (Slats and Krueger Flaps)
- 29-10-00, P. Block 301	Main
- 29-21-00, P. Block 301	Green Auxiliary Power
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-21, P. Block 401	Temperature Control Sensor 53HA (54HA)
- 36-11-23, P. Block 401	High Stage Pressure Sensor 47HA (48HA)
- 36-21-13, P. Block 401	Precooler Outlet Temperature Sensor
- 54-51-72, P. Block 601	Forward Attach Fitting (RIB12)
- 54-51-72, P. Block 801	Forward Attach Fitting (RIB12)
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Engine Cowl Doors

B. Procedure

(1)Job set-up

(a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

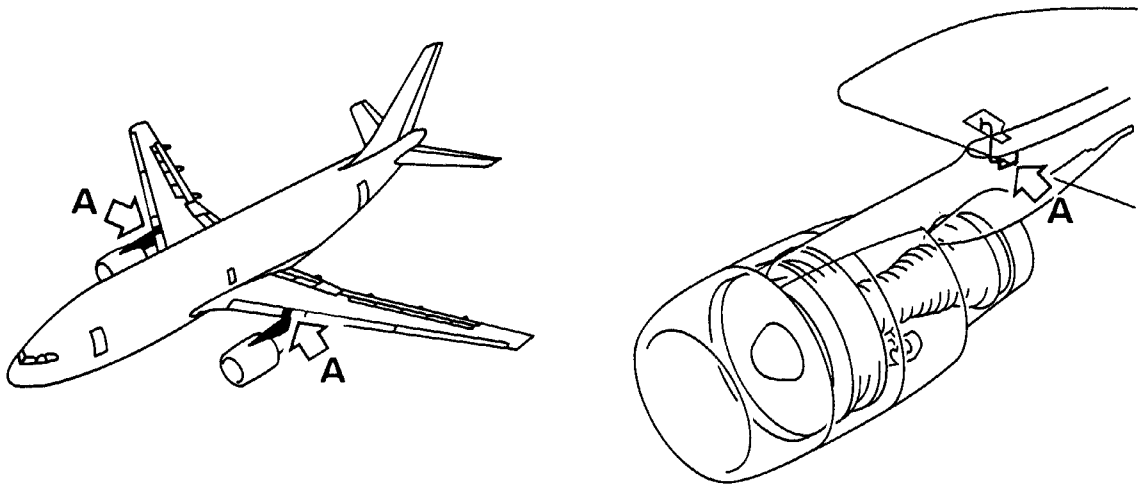
(b)Open, safety and tag the following circuit breakers :

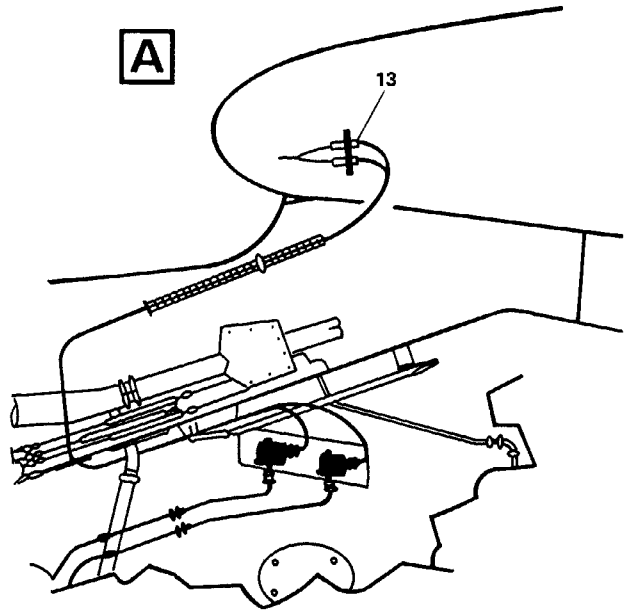
PANEL	SERVICE	IDENT.	LOCATION
21VU	AFS/TCC/SYS 1/28VDC	306/CJ1	102/H 8
21VU	AFS/TCC/SYS 1/115VAC	308/CJ1	102/H 9
21VU	AFS/TCC/SENSOR	305/CJ1	102/H10
21VU	AFS/TCC/SYS 2/115VAC	308/CJ2	102/H11
21VU	AFS/TCC/SYS 2/28VDC	306/CJ2	102/H12

(c)Remove engine (Ref. 71-00-00, P. Block 401).
(d)Install pylon access platforms.
(e)Jack-up the aircraft (Ref. 07-11-00, P. Block 1).
NOTE : It is not necessary to lift the aircraft wheels clear of ground. Jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.
Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.
(f)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(g)Make certain that electronics racks ventilation is correct.
(h)Pressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).
(i)Place flap and slat control lever in fifth notch to extend slats (Ref. 27-80-00, P. Block 301).
NOTE : Slats must be extended to gain access to panel 512AT (612AT).
(j)Depressurize Green hydraulic system (Ref. 29-21-00 or 29-10-00, P. Block 301) and de-energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(k)Remove the following fillets and skin panels :
On LH engine pylon : 471AL (472AR)
On RH engine pylon : 481AL (482AR)
On LH wing : 512AT
On RH wing : 612AT.
(l)Not applicable.
(m)Disconnect electrical connectors (13) from high stage pressure sensor 47HA (48HA) and install blanking caps.
(Ref. Fig. 401)
(n)Remove sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21 and 36-21-13, P. Block 401).
(p)Remove air bleed duct located between wing RIB6 and RIB8 and remove air bleed duct elbow (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 402)
(q)Remove electrical cable clamp blocks located near bleed ducts and stow cables to facilitate access to attach fitting.
(r)Remove air bleed duct shield (Ref. Fig. 403).
(s)Install tool 98A54403024000 on pylon forward pyramid and on jack.
(Ref. Fig. 404)
(t)Position jack under pyramid and apply a vertical load as follows :
- if the engine cowl doors are installed, apply a vertical load of between 1400 and 2000 kg (3086 and 4409 lbf),
- if the engine cowl doors are removed, apply a vertical load of between 500 and 700 kg (1124 and 1573 lbf).

(2)Removal
(Ref. Fig. 405)
WARNING : - CHECK THAT REQUIRED LOAD IS APPLIED BY JACK ON PYLON.
- IF TIME REQUIRED FOR ACCOMPLISHMENT OF THE TASK EXCEEDS ONE HOUR, IT IS NECESSARY TO INSTALL DUMMY SHACKLES 98A54403005000 AND DUMMY SLEEVES 98A54403006000
(Ref. Fig. 406)

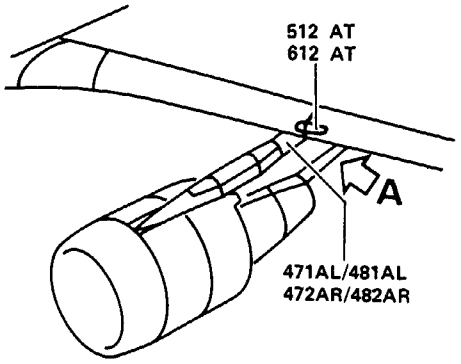
NOTE : Procedure is identical for each bolt and sleeve.

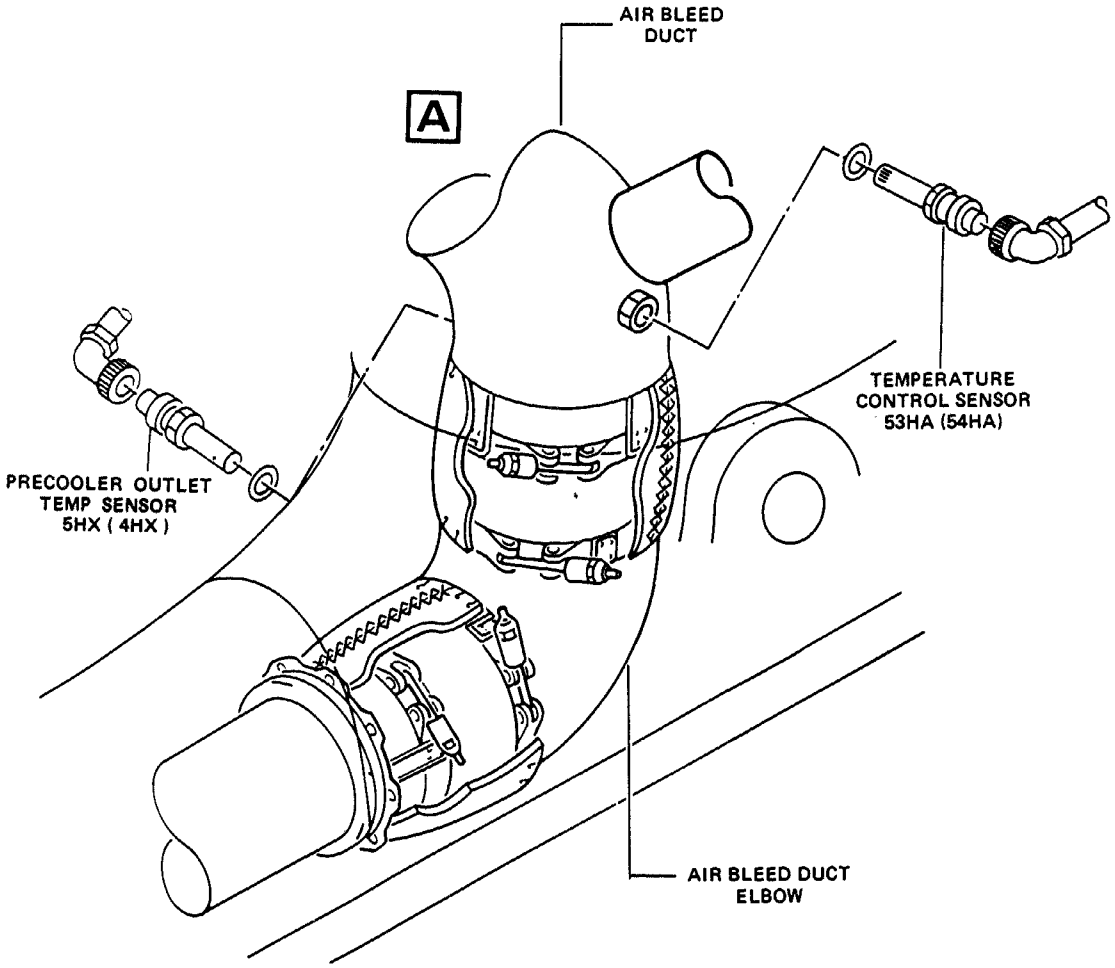




BM5 54 51 72 4 CANO 00

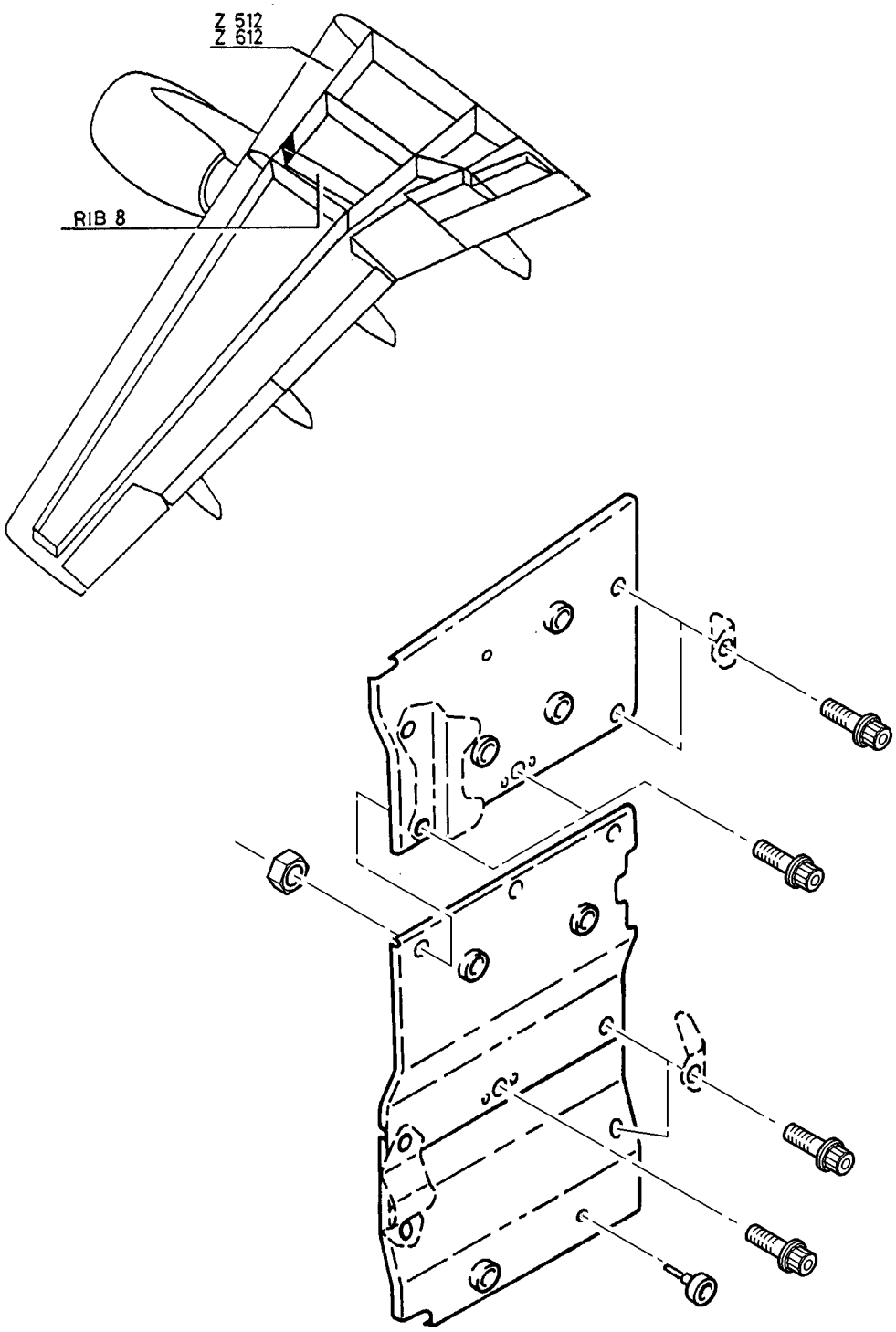
Removal of Pneumatic Lines and Sensors
Figure 401





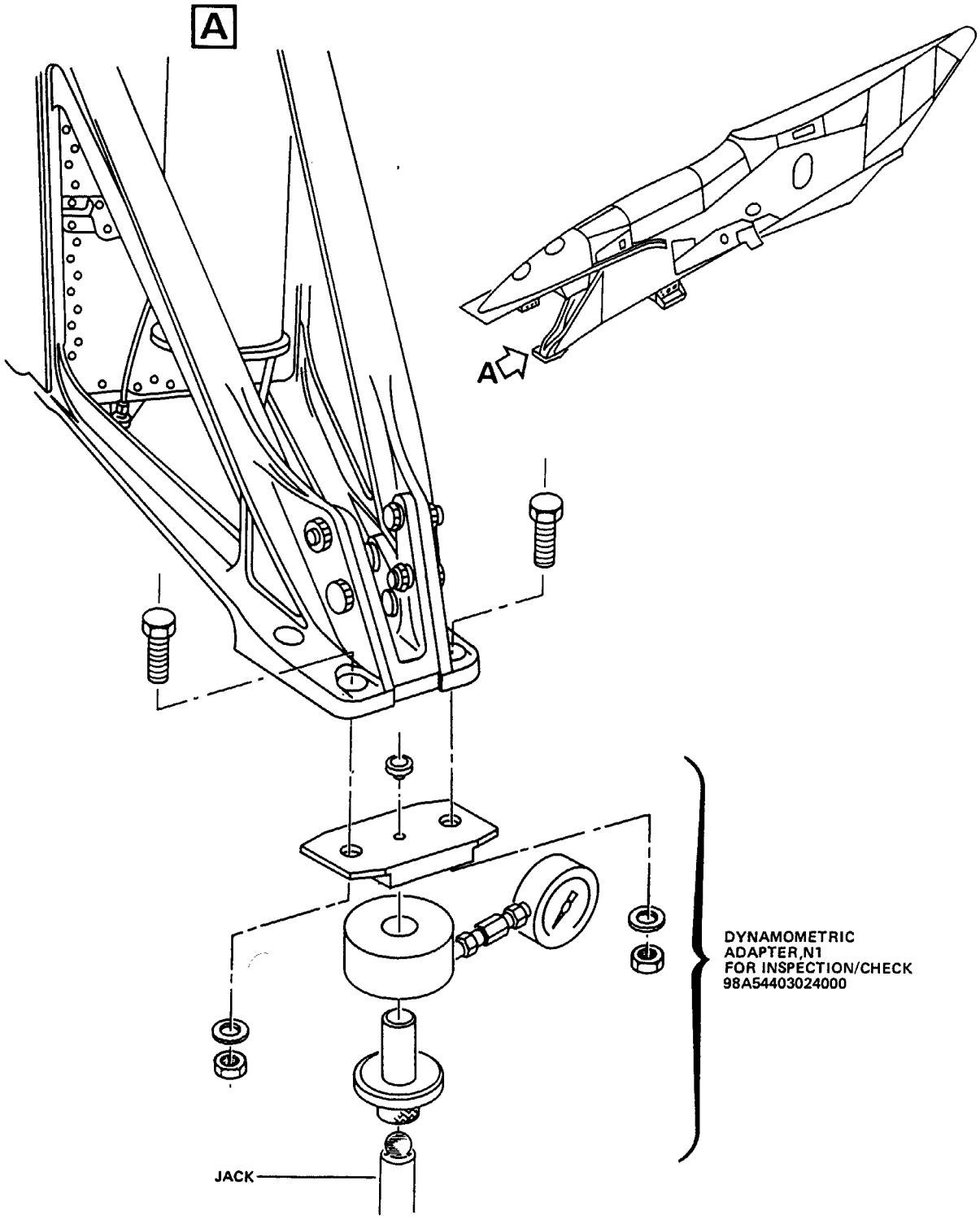
BM5 54 51 72 4 SRBO 25

Removal of Air Bleed Duct and Sensors
Figure 402

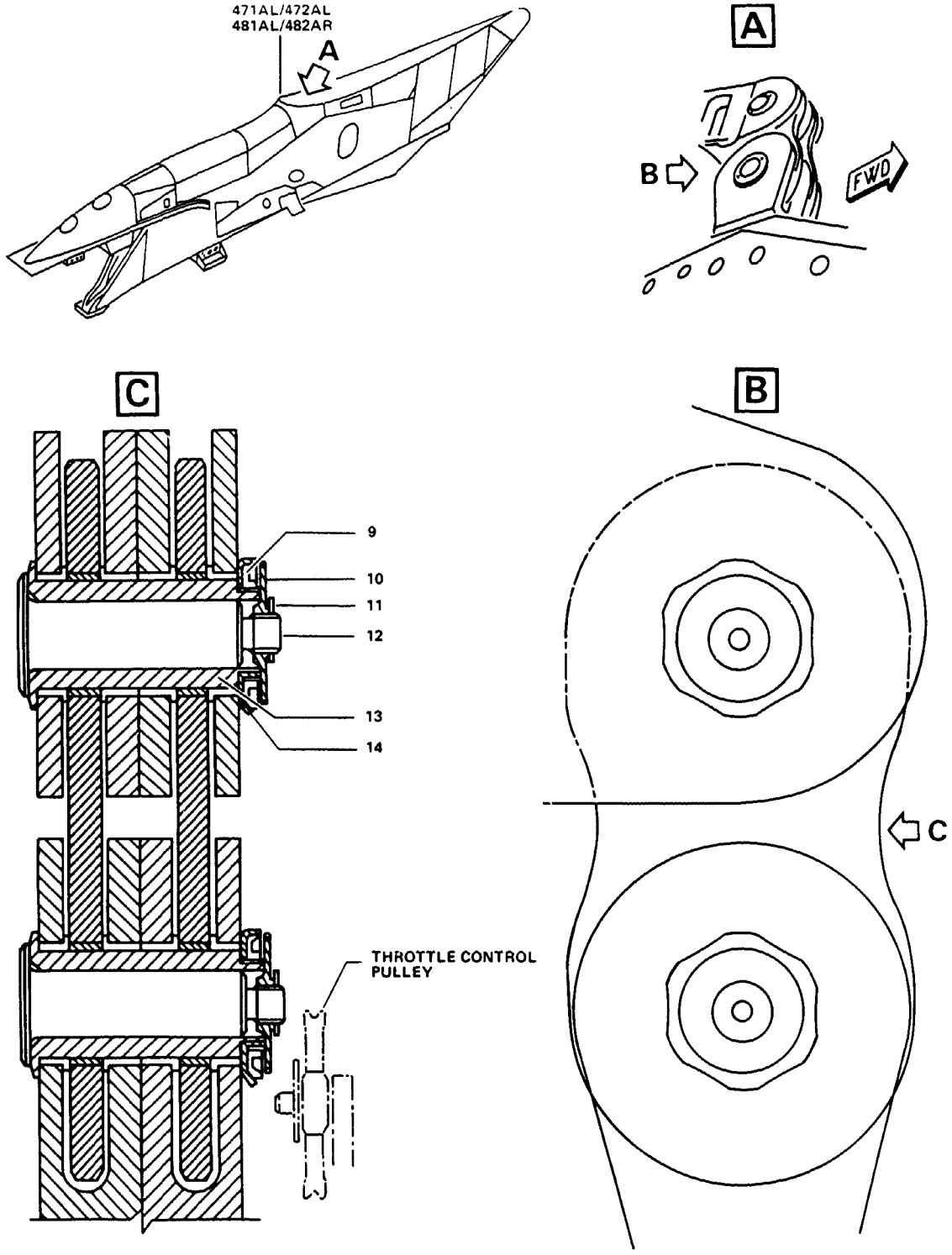


BM5 54 51 72 4 LDM0 00

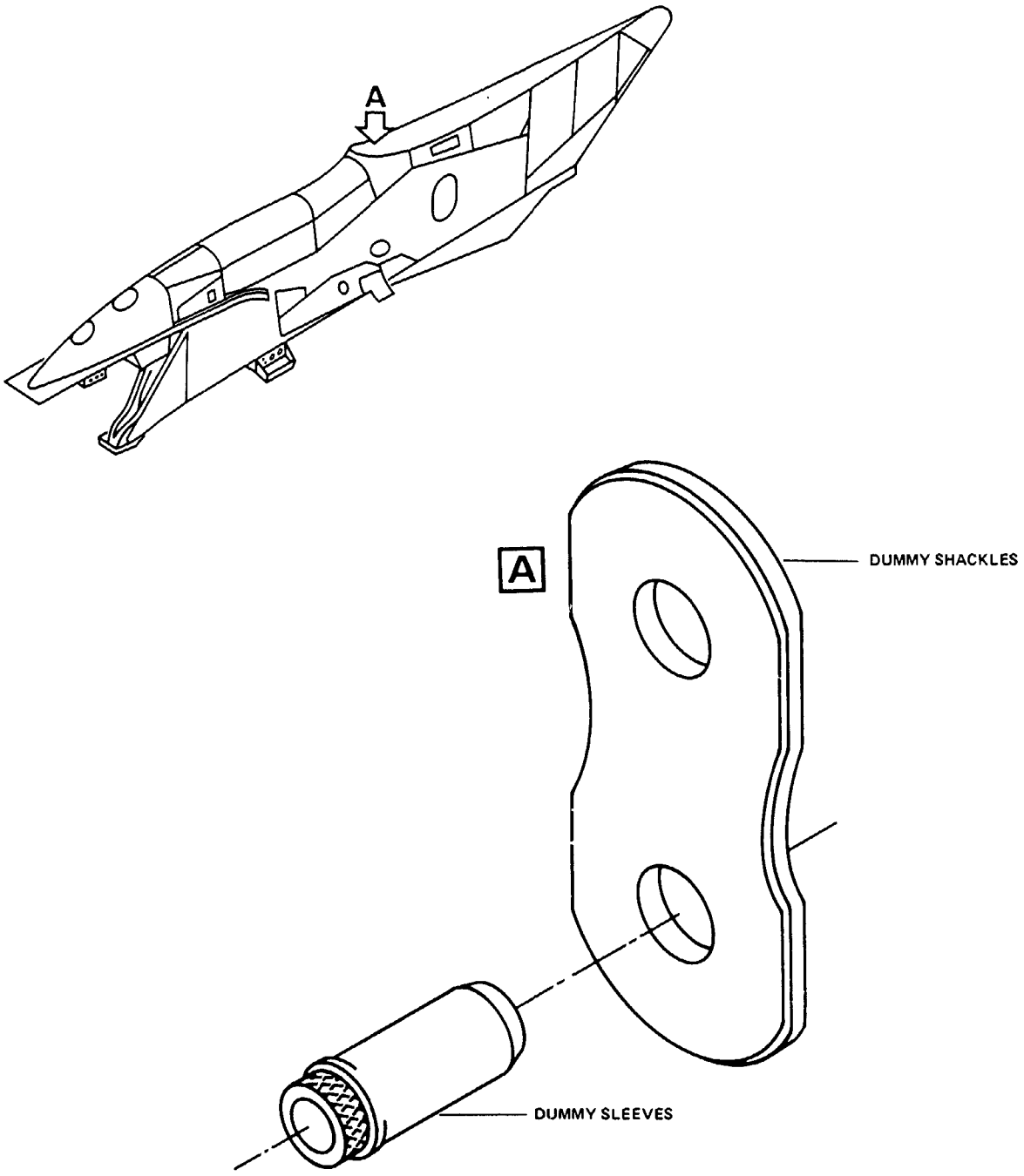
Removal of Air Bleed Duct Shield
Figure 403



Installation of Dynamometric Adapter under Pyramid
Figure 404



Removal of Fail Safe Bolts and Sleeves and Shackles
Figure 405



BMS 54 51 72 4 CNMO 13

Pylon-to-Wing Attachment by Dummy Shackles and Sleeves
Figure 406

(a)Remove and discard cotter pin (11).
(b)Use pin wrench 65303A4351M000 to immobilize bolt (12) and slightly unscrew nut (10) using special wrench 65375AB51M000.
(c)Extract bolt (12) and retain nut (10).
(d)Unsafety nut (9), immobilize sleeve (13) using a thin spanner and remove nut (9) using special wrench 65375AB351M000. Discard key washer (14).
(e)Remove sleeve (13) starting from the lower sleeve using tool 98A54003022000.
NOTE : A slight variation of the force applied by the jack under forward pyramid facilitates sleeve extraction.
(f)After shackles removal, check on pylon the correct alignment of RIB12 fitting bushes bores by manually inserting the sleeves into their housings.
If there are difficulties of insertion, repair bushes have to be installed (Ref. 54-51-72, P. Block 801).

(3)Checks
(a)Clean bolts, sleeves, shackles, yokes and washers with Material No. 11-003.
(b)Perform visual check (Ref. 54-51-72, P. Block 601).

**ON A/C 001-005,

(4)Installation
NOTE : The installation procedure is identical for each fail safe bolt and sleeve.

(a)Coat holes of fixed yokes on wing lower surface with Material No. 04-004A.
(b)Install shackles, bolts and sleeves as follows :
NOTE : Install upper fail safe fastener before the lower one.
1 Install shackles into fixed yokes on wing.
2 Coat plain section of sleeves (13) with Material No. 04-004 A and threaded surface with Material No. 04-007.
3 Insert sleeve into hole using tool 98A54003084000 and with threaded section towards throttle control pulley.
NOTE : A slight variation of the force applied under forward pyramid facilitates lower sleeve installation.
4 Install a new key washer (14).
5 Screw nut (9) without tightening until against sleeve (13).
6 Immobilize sleeve (13) and TORQUE nut (9) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench.
7 Safety nut (9) by bending one tab of the key washer (14).
8 Coat threading of bolt (12) with Material No. 04-007 and insert bolt (12) into sleeve (13) with threaded section towards throttle control pulley.
9 Immobilize bolt (12) using pin wrench 65303AB351M000 and tighten nut (10).
10 TORQUE nut (10) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and ins-

tall cotter pin (11).

(5)Close-up

**ON A/C 006-100,

(4)Installation

NOTE : The installation procedure is identical for each fail safe bolt and sleeve.

(a)Coat holes of fixed yokes on wing lower surface with Material No. 04-004A.

(b)Install shackles, bolts and sleeves as follows :

NOTE : Install upper fail safe fastener before the lower one.

1 Install shackles into fixed yokes on wing.

2 Coat plain section of sleeves (13) with Material No. 04-004A.

3 Insert sleeve into hole using tool 98A54003084000.

NOTE : A slight variation of the force applied under forward pyramid facilitates lower sleeve installation.

4 Install a new key washer (14).

5 Screw nut (9) without tightening until against sleeve (13).

6 Immobilize sleeve (13) and TORQUE nut (9) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench.

7 Safety nut (9) by bending one tab of the key washer (14).

8 Coat threading of bolt (12) with Material No. 04-007 and insert bolt (12) into sleeve (13).

9 Immobilize bolt (12) using pin wrench 65303AB351M000 and tighten nut (10).

10 TORQUE nut (10) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (11).

(5)Close-up

R **ON A/C 001-100,

(a)Install air bleed duct shield (Ref. Fig. 403).

(b)Install air bleed duct elbow and air bleed duct located between wing RIB6 and RIB8 (Ref. 36-11-00, P. Block 401). (Ref. Fig. 402)

(c)Install sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21 and 36-21-13, P. Block 401). (Ref. Fig. 402).

(d)Remove plugs and connect electrical connectors (13) from high stage pressure sensors 47HA (48HA).

(e)Not applicable.

(f)Install electrical cables and clamps located near air bleed ducts.

(g)Remove tool 98A54403024000 from jack and pylon.

(h)Install engine (Ref. 71-00-00, P. Block 401).

(i)Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).

(j)Close engine cowls (Ref. 71-13-00, P. Block 301).

(k)Install the following fillets and skin panels
- LH engine pylon 471AL (472AR)
- RH engine pylon 481AL (482AR)
- LH wing 512AT
- RH wing 612AT.

(l)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(m)Make certain that electronics racks ventilation is correct.
(n)Pressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).
(p)Bring flap and slat control lever in position 1 (FLAPS 0°, SLATS 0°) (Ref. 27-80-00, P. Block 301).
(q)Depressurize Green hydraulic system (Ref. 29-21-00 or 29-10-00, P. Block 301).
(r)De-energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(s)Remove safety clips and tags and close circuit breakers.
(t)Remove access platforms.

1. Inspection of Fail-Safe Bolts, Sleeves, Yokes and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
R - 54-51-00, P. Block 601	Pylon Box
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)
R - 54-51-75, P. Block 601	Aft Attach Fitting (RIB18)
R - SRM/54-51-71, P. Block 101	

B. Procedure

(1)Job set-up

(a)Remove forward attach fitting (Ref. 54-51-72, P. Block 401).

(2)Inspection

(a)Visually inspect the following items (Ref. Table 601),

R (Ref. SRM 54-51-71, P. Block 101):

- yokes attached to main frame and wing
- fail-safe bolts
- shackles
- sleeves.

	Yoke pylon side / wing side	Shackles	fail-safe bolts	sleeves
Superficial wear	Repair as per manufacturer's instructions	Ref. 54-51-00, P. Block 601	Replace	Replace
Deformation	Repair as per manufacturer's instructions	Replace	Replace	Replace
Corrosion	Repair as per manufacturer's instructions	Ref. 54-51-00, P. Block 601		Replace
Structural defects	Repair as per manufacturer's instructions	Replace	Replace	Replace
Bore deformation	Replace bushes	Replace bushes		Replace
Wear on bores	Replace bushes	Replace bushes		Replace

R Inspection of Pylon-to-Wing Forward Attach Fitting

	Yoke pylon side / wing side	Shackles	fail-safe bolts	sleeves

Table 601

NOTE : In case of wear being evidenced on sleeves and/or shackles, it is mandatory to check aft attach fittings for condition (Ref. 54-51-75, P. Block 601).

(3)Close-Up

(a)Install forward attach fitting (Ref. 54-51-72, P. Block 401)

2. Dimensional Checks of Forward Attach Fittings

A. Reason for the Job

(1)Check of fits and clearances after removal of one pylon.

B. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB 12)
- 54-51-72, P. Block 801	Forward Attach Fitting (RIB 12)

C. Procedure

(1)Job set-up

(a)Remove forward attach fitting (Ref. 54-51-72, P. Block 401).

(2)Inspection

(a)Check the following dimensions :

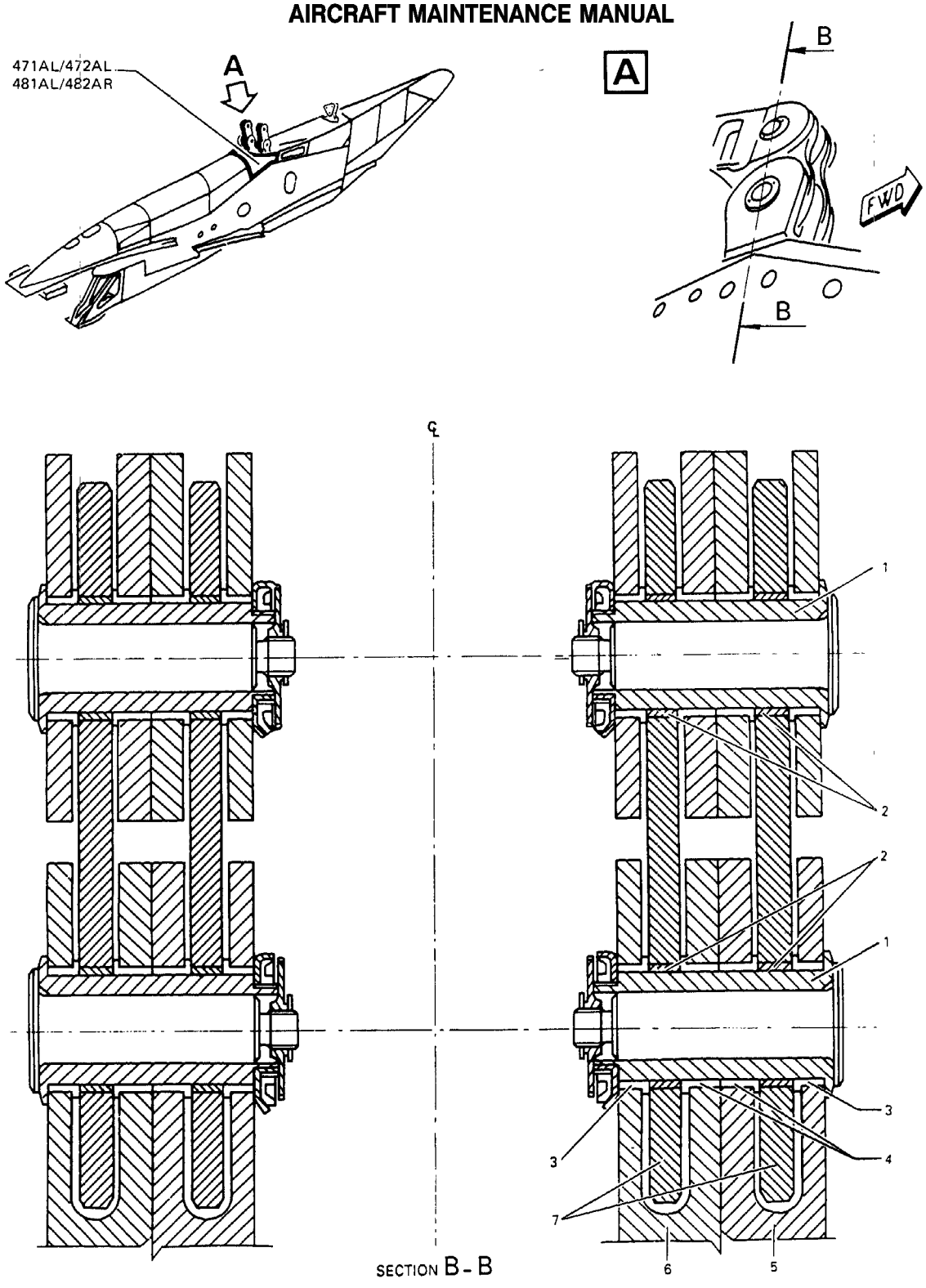
(Ref. Fig. 601)

NOTE : When wear limits are exceeded, replace bushes (Ref. 54-51-72, P. Block 801).

CAUTION : NO WEAR, DISTORTION OR STRUCTURAL DEFECT OF BOLT AND BUSH STEEL OR PLATING IS ALLOWED. DISCARD BOLT OR BUSH AS NECESSARY.

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
B							
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID2	2.2047	2.2059				2.2074	

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
	(56.000)	(56.030)				(56.070)	
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID4	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID3	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD2	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID7	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD4	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID5	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD4	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID6	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD3	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID5	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD3	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID6	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	



Forward Attach Fitting
Figure 601

R

R (3)Close-up
R (a)Install forward attach fitting (Ref. 54-51-72, P. Block 401).

FORWARD ATTACH FITTING (RIB12) - INSPECTION/CHECK

1. Inspection of Fail-Safe Bolts, Sleeves, Yokes and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-00, P. Block 601	Pylon Box
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)
- 54-51-75, P. Block 601	Aft Attach Fitting (RIB18)
- SRM/54-51-71, P. Block 101	

B. Procedure

(1)Job set-up

(a)Remove forward attach fitting (Ref. 54-51-72, P. Block 401).

(2)Inspection

(a)Visually inspect the following items (Ref. Table 601), (Ref. SRM 54-51-71, P. Block 101):

- yokes attached to main frame and wing
- fail-safe bolts
- shackles
- sleeves.

	Yoke pylon side / wing side	Shackles	fail-safe bolts	sleeves
Superficial wear	Repair as per manufacturer's instructions	Ref. 54-51-00, P. Block 601	Replace	Replace
Deformation	Repair as per manufacturer's instructions	Replace	Replace	Replace
Corrosion	Repair as per manufacturer's instructions	Ref. 54-51-00, P. Block 601		Replace
Structural defects	Repair as per manufacturer's instructions	Replace	Replace	Replace
Bore deformation	Replace bushes	Replace bushes		Replace
Wear on bores	Replace bushes	Replace bushes		Replace

Inspection of Pylon-to-Wing Forward Attach Fitting

	Yoke pylon side / wing side	Shackles	fail-safe bolts	sleeves

Table 601

NOTE : In case of wear being evidenced on sleeves and/or shackles, it is mandatory to check aft attach fittings for condition (Ref. 54-51-75, P. Block 601).

(3)Close-Up

(a)Install forward attach fitting (Ref. 54-51-72, P. Block 401)

2. Dimensional Checks of Forward Attach Fittings

A. Reason for the Job

(1)Check of fits and clearances after removal of one pylon.

B. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB 12)
- 54-51-72, P. Block 801	Forward Attach Fitting (RIB 12)

C. Procedure

(1)Job set-up

(a)Remove forward attach fitting (Ref. 54-51-72, P. Block 401).

(2)Inspection

(a)Check the following dimensions :

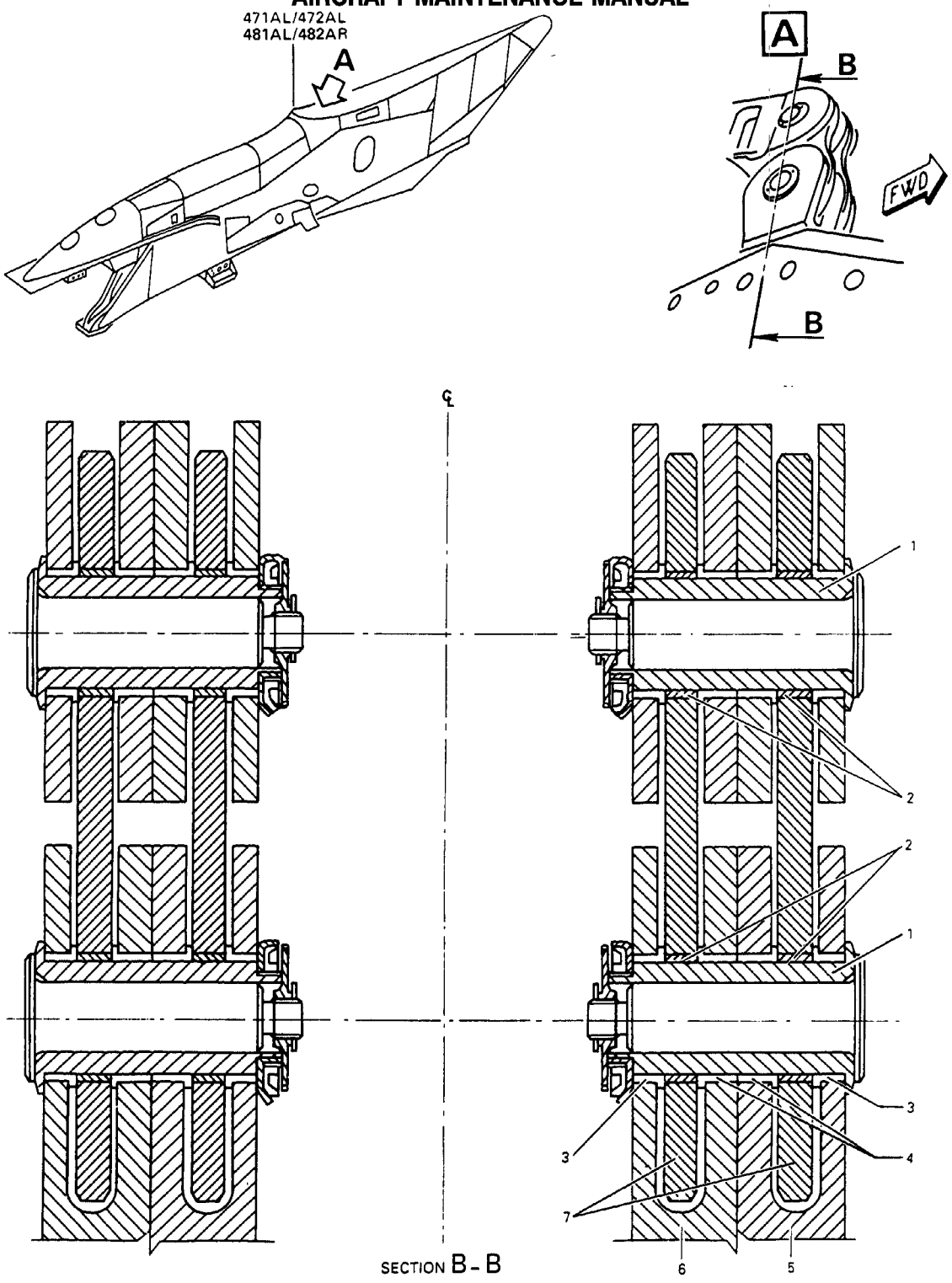
(Ref. Fig. 601)

NOTE : When wear limits are exceeded, replace bushes (Ref. 54-51-72, P. Block 801).

CAUTION : NO WEAR, DISTORTION OR STRUCTURAL DEFECT OF BOLT AND BUSH STEEL OR PLATING IS ALLOWED. DISCARD BOLT OR BUSH AS NECESSARY.

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
B OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID2	2.2047	2.2059				2.2074	

Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Millimeters)		Dimension Limits Inches (Millimeters)		Max. Allow. Clear in. (mm)
	Min.	Max.	Min.	Max.	Min.	Max.	
	(56.000)	(56.030)				(56.070)	
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID4	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID3	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD2	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID7	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD4	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID5	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD4	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID6	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD3	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID5	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	
OD3	2.4430 (62.053)	2.4438 (62.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.4427 (62.046)		0.00
ID6	2.4409 (62.000)	2.4421 (62.030)				2.4427 (62.046)	



Forward Attach Fitting
Figure 601

(3)Close-up
(a)Install forward attach fitting (Ref. 54-51-72, P. Block 401).

FORWARD ATTACH FITTING (RIB12)
APPROVED REPAIR

R 1. Replacement of the Bushes of the Forward Attach Fitting at RIB12
R WARNING : SPECIFIC ENVIRONMENTAL CONTROL AND EQUIPMENT IS REQUIRED WHEN
R PERFORMING GRINDING/SANDING/HONING OPERATIONS ON THESE BUSHES, AS
R THEY CONTAIN COPPER BERYLLIUM, AND MAY GENERATE TOXIC BERYLLIUM
R DUST.
R NOTE : This procedure is identical for left and right pylons.
R NOTE : On the pylon attach fitting opposite to the attach fitting to be
R re-bored, leave bushes in place. If necessary, repeat the procedure
R for the opposite side attach fitting.
R A. Repair Sizes of Attach Fittings at RIB12
Original diameter : 62 mm (2.4409 in.)
Tolerance H7 : +0, +0.030 mm (+0, +0.00118 in.)

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
R1	62.2 (2.4488)	H7 : + 0.030 (+0.00118) + 0 (+0)
R2	62.4 (2.4566)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	62.6 (2.4645)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	62.8 (2.4724)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	63 (2.4803)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	63.4 (2.4960)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	63.9 (2.5157)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	64.4 (2.5354)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 801
Repair Sizes of Attach Fittings at RIB12

R B. Equipment and Materials

ITEM	DESIGNATION
(1)98A54003029000	Bush Extractor Set
R or	

	ITEM	DESIGNATION
R	98A54003029001	Bush Extractor Set
	(2)98A54003083000	Reboring Tool
	(3)98A54003094000	Chamfering Tool
	(4)98A54003063000	Installation Tool
R	(5)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
	(6)	Access Platform
	(7)	Circuit Breaker Safety Clips
	Referenced Procedures	
	- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance Operations
R	- 20-23-12, P. Block 1	Specified Torque Values for Unions
R	- 20-28-11, P. Block 1	Electrical Bonding
	- 27-80-00, P. Block 301	Lift Augmenting (Slats and Krueger Flaps)
	- 28-20-00, P. Block 401	Distribution
R	- 28-21-00, P. Block 501	Fuel Pump System
	- 36-11-00, P. Block 401	Engine Bleed Air Supply System
	- 36-11-21, P. Block 401	Temperature Control Sensor
	- 36-21-13, P. Block 401	Precooler Outlet Temperature Sensor (4HX, 5HX)
	- 36-11-23, P. Block 401	High Stage Pressure Sensor
	- 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)
	- 71-00-00, P. Block 401	Power Plant
	- 71-13-00, P. Block 301	Cowl Doors
	- 76-11-31, P. Block 401	Secondary Transmission

R C. Procedure

R (1)Job set-up

(a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b)Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
21VU	AFS/TCC SYS 1/28VDC	306/CJ1	102/H 8
21VU	AFS/TCC/SYS 1/115VAC	308/CJ1	102/H 9
21VU	AFS/TCC/SENSOR	305/CJ1	102/H10
21VU	AFS/TCC SYS 2/115VAC	308/CJ2	102/H11
21VU	AFS/TCC/SYS 2/28VDC	306/CJ2	102/H12

(c)Remove engine (Ref. 71-00-00, P. Block 401).

(d)Install pylon access platforms.

(e)Jack up the aircraft (Ref. 07-11-00, P. Block 1).

NOTE : It is not necessary to lift the aircraft wheels clear of ground. Jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.
Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.

(h)Place flap and slat control lever in fifth notch to extend flaps and slats (Ref. 27-80-00, P. Block 301).

NOTE : Slats must be extended to gain access to panel 512AT (612AT).

(j)Remove the following fillets and skin panels :
On LH engine pylon : 471AL (472AR)
On RH engine pylon : 481AL (482AR)
On LH wing : 512AT. 512KB. 523AB
On RH wing : 612AT. 612KB. 623AB

(k)Remove sensors 53HA (54HA), 5HX (4HX) (Ref. 36-11-00, P. BLock 401).

(l)Remove air bleed duct located between wing RIB6 and RIB8 ; remove air bleed duct elbow. Cap open end of ducts on aircraft (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 801)

R (m)Disconnect electrical connectors (13) from high stage pressure
R sensor 47HA (48HA) and install blanking caps.
R (Ref. Fig. 802)

(p)Remove the section of fuel line located between inboard and outboard
R attach fittings of engine pylon and disconnect fuel line as follows :
R (Ref. Fig. 803)
R 1 Disconnect coupling halves (42) as follows:
R - Remove nuts (45).
R - Remove nuts (47), washers (46) and bolts (50).
R - Disconnect bonding leads (6) (Ref. 20-28-11, P. Block 1).
R - Remove the four half-shells (7).
R - Slide off the sleeve of the coupling halves (42) until nuts (9) are free.
R - Loosen coupling nuts (9).
R 2 Remove fuel line from pylon upper spar as follows:
R - Remove screws (49) and washers (48).
R - Disengage fuel line at level of pylon.
R 3 Remove fuel line at level of wing as follows:
R - Loosen coupling nut (40).
R - Remove bolts (44) and nuts (43) and remove flange (41).
R - Disengage fuel line at level of wing.
R
R

(q)Remove electrical cable clamp blocks located near air bleed ducts and stow cables to facilitate access to attach fitting.

(r)Remove air bleed duct shield.
(Ref. Fig. 804)

(s)Remove and stow throttle control electrical cable clamps.

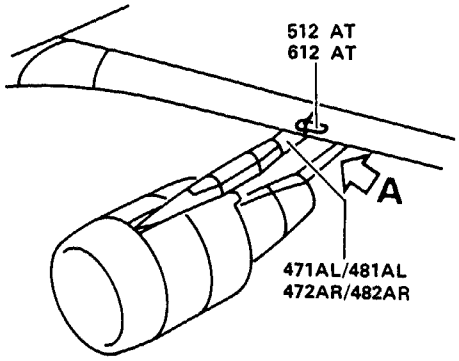
(t)Remove fail safe fasteners (bolts and sleeves) from attach fitting (Ref. 54-51-72, P. Block 401).

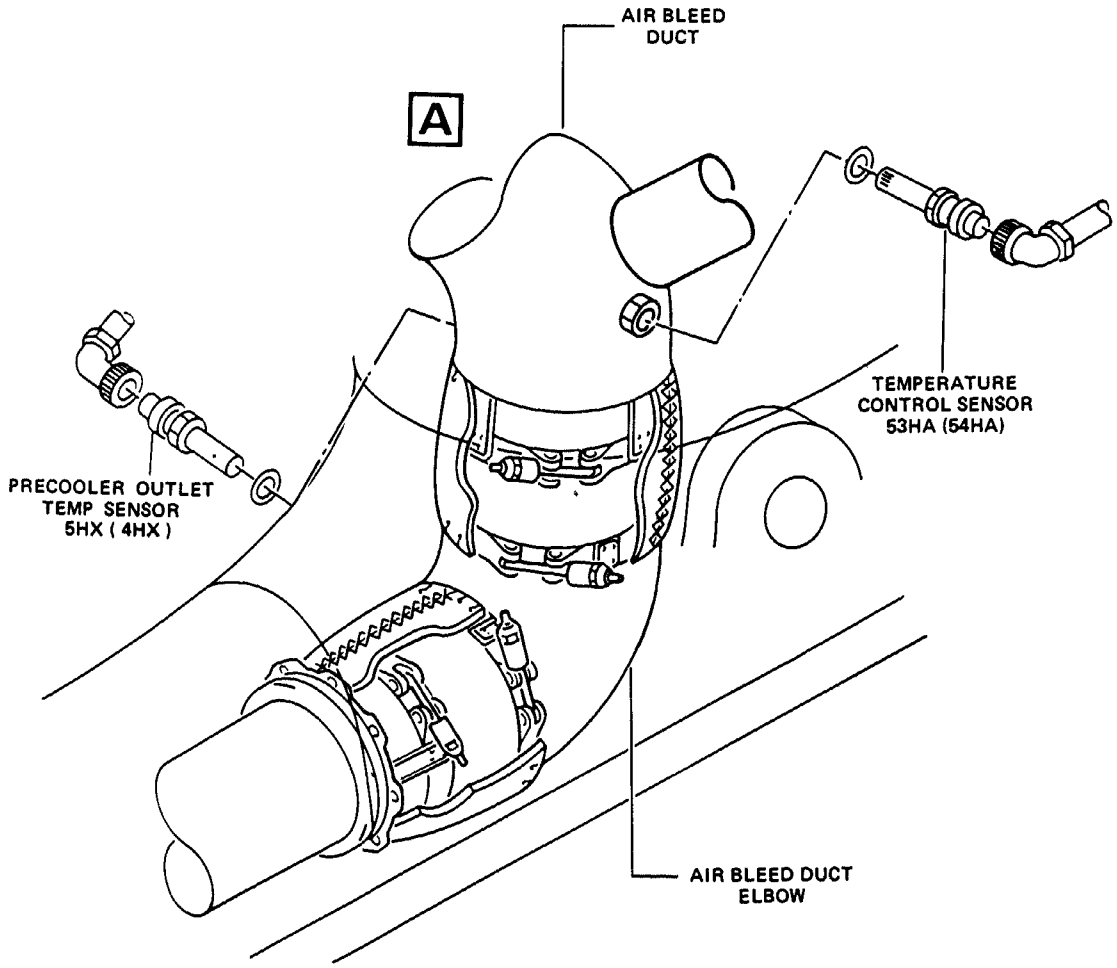
R NOTE : You must remove the bushes, rebore the fitting (when necessary),
R install the new bushes and rebore the new bushes on one side at a
R time. The bushes on the other side stay in position so as to install
R and center the expandable bush for the boring unit installation.
R The procedure below is given for one side and is identical for the
R other side. Use also the new bushes for the installation and centering
R of the expandable bush for the boring unit installation.

R (2)Replacement of Bushes

R (a)Removal of bushes at RIB12.
(Ref. Fig. 805, 806, 807)

R NOTE : Tools 98A54003029101 and 98A54003029102 are sub-assemblies of





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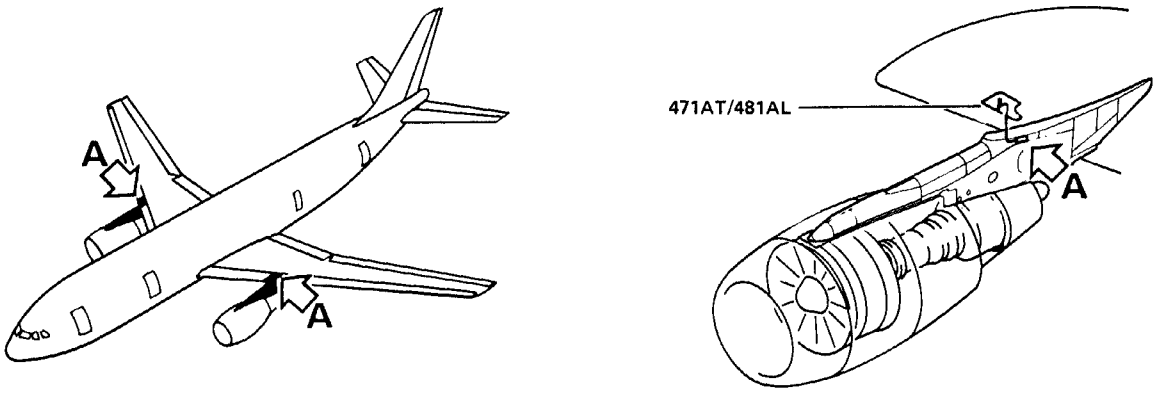
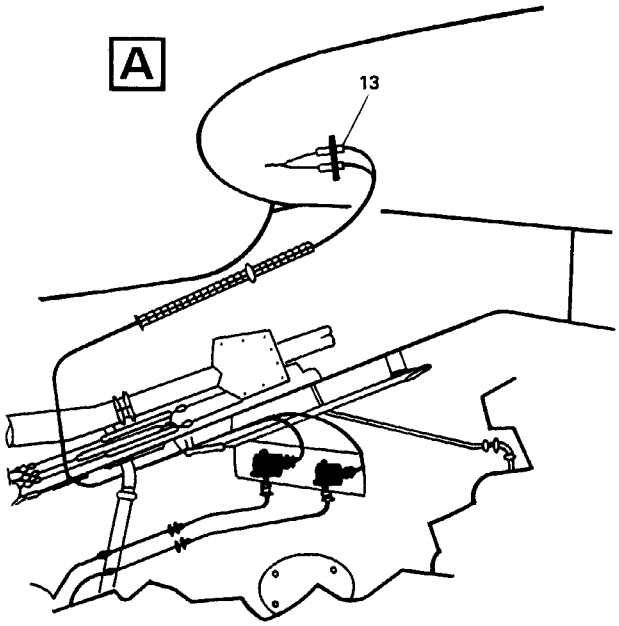
Removal of Air Bleed Ducts and Sensors
Figure 801





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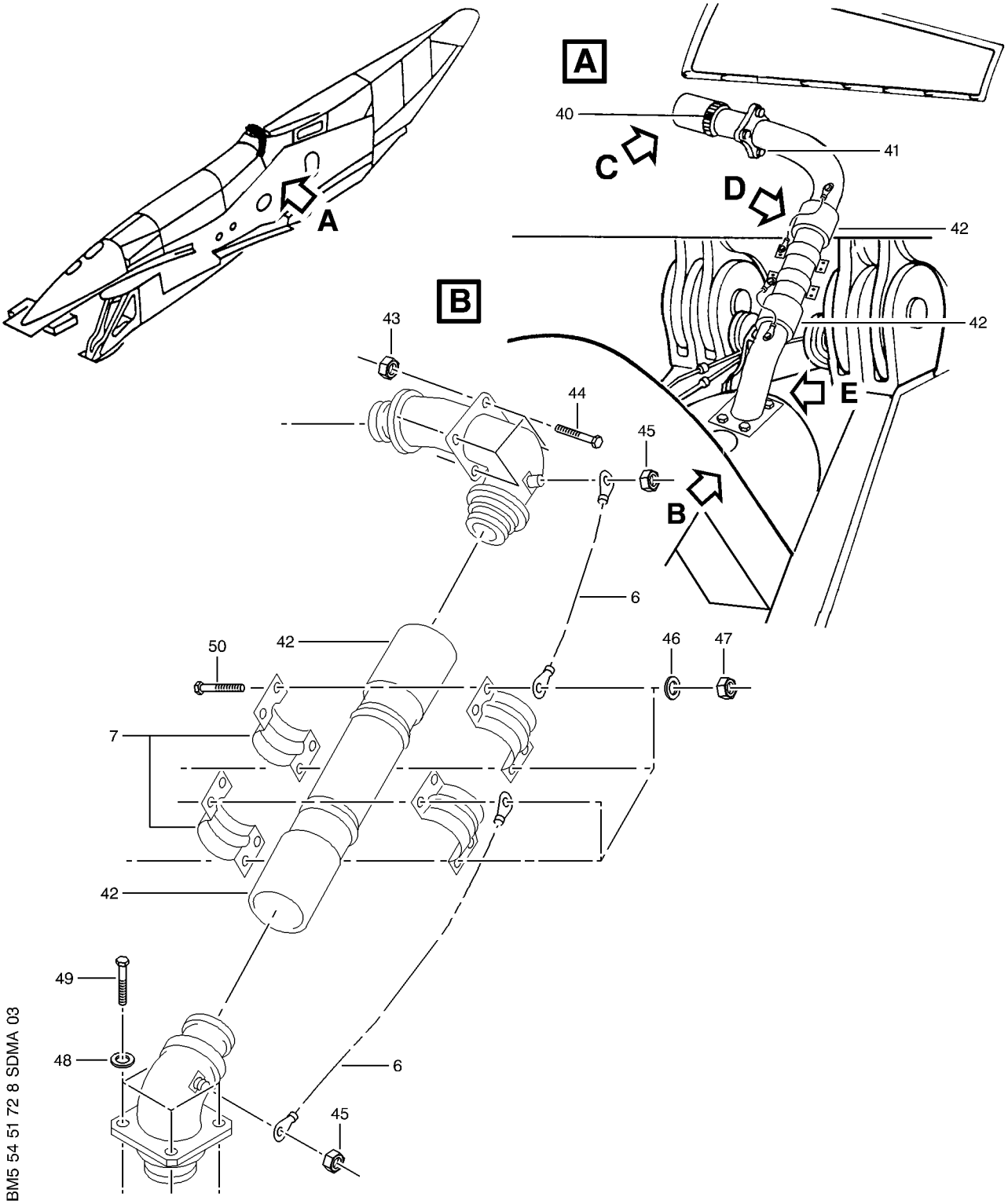
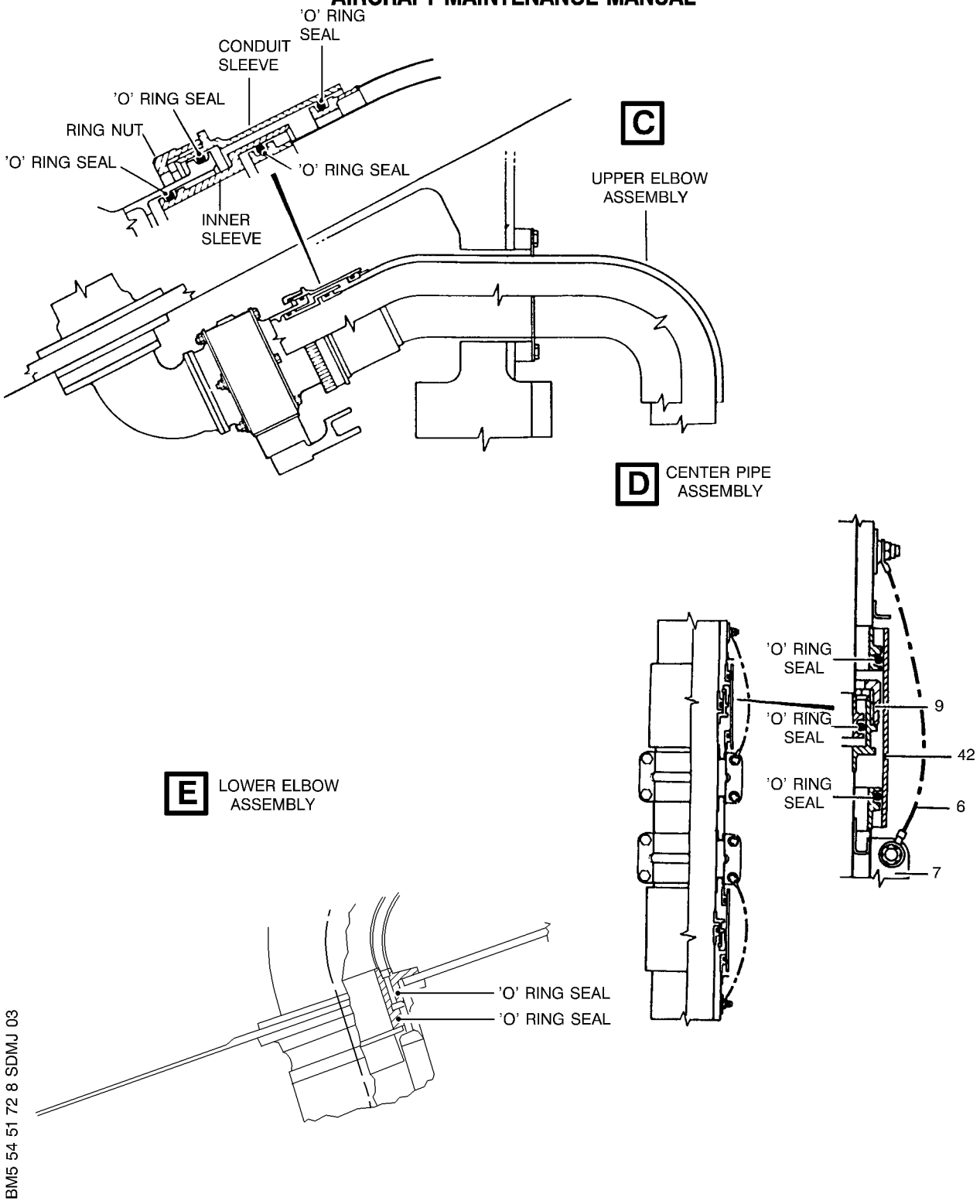
Removal of Pneumatic Lines and Sensors
Figure 802



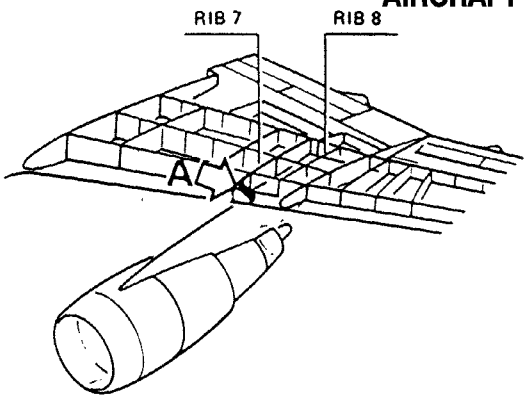
Fuel Line Removal (Sheet 1/2)
Figure 803

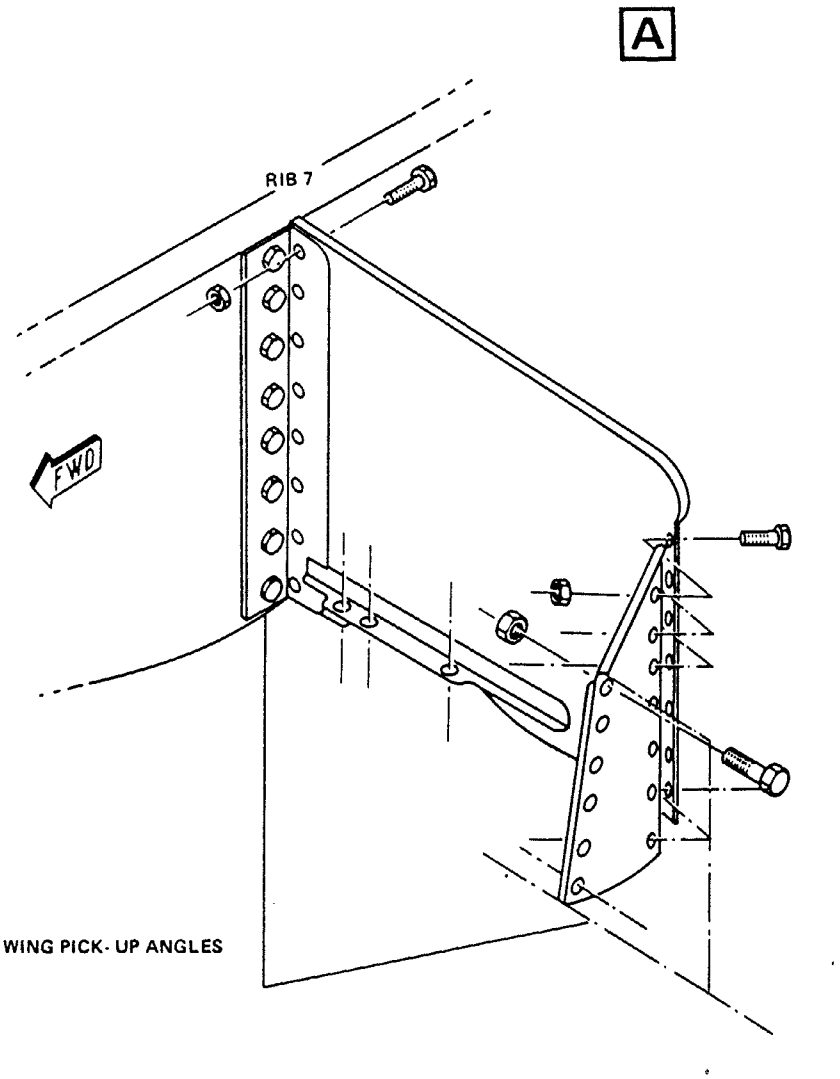
R



Fuel Line Removal (Sheet 2/2)
Figure 803

R





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Removal of Air Bleed Duct Shield
Figure 804

tool 98A54003029000.
Tools 98A54003029103 and 98A54003029102 are sub-assemblies of tool 98A54003029001.

1 Remove bush shoulders by machining with tool 98A54003029101 or 98A54003029103.
- adjust tool bit (4) on tool holder (3)
- install tool holder (3) into attach fitting and install attach spider (1)
  NOTE : Adjust setting screw (2) so that tool bit does not knock on attach fitting at installation.
- secure attach spider (1) on fitting with clamps
- install drive unit on tool holder
- remove shoulder by adjusting tool progression with screw (2), place cutter in contact with bush shoulder and machine over 2 mm (0.078 in.)
- move tool away and stop drive unit
- remove drive unit
- remove tool holder (3) and attach spider (1).

2 Remove inner bushes using bush extractor set 98A54003029102.

3 Remove outer bushes using bush extractor set 98A54003029102.

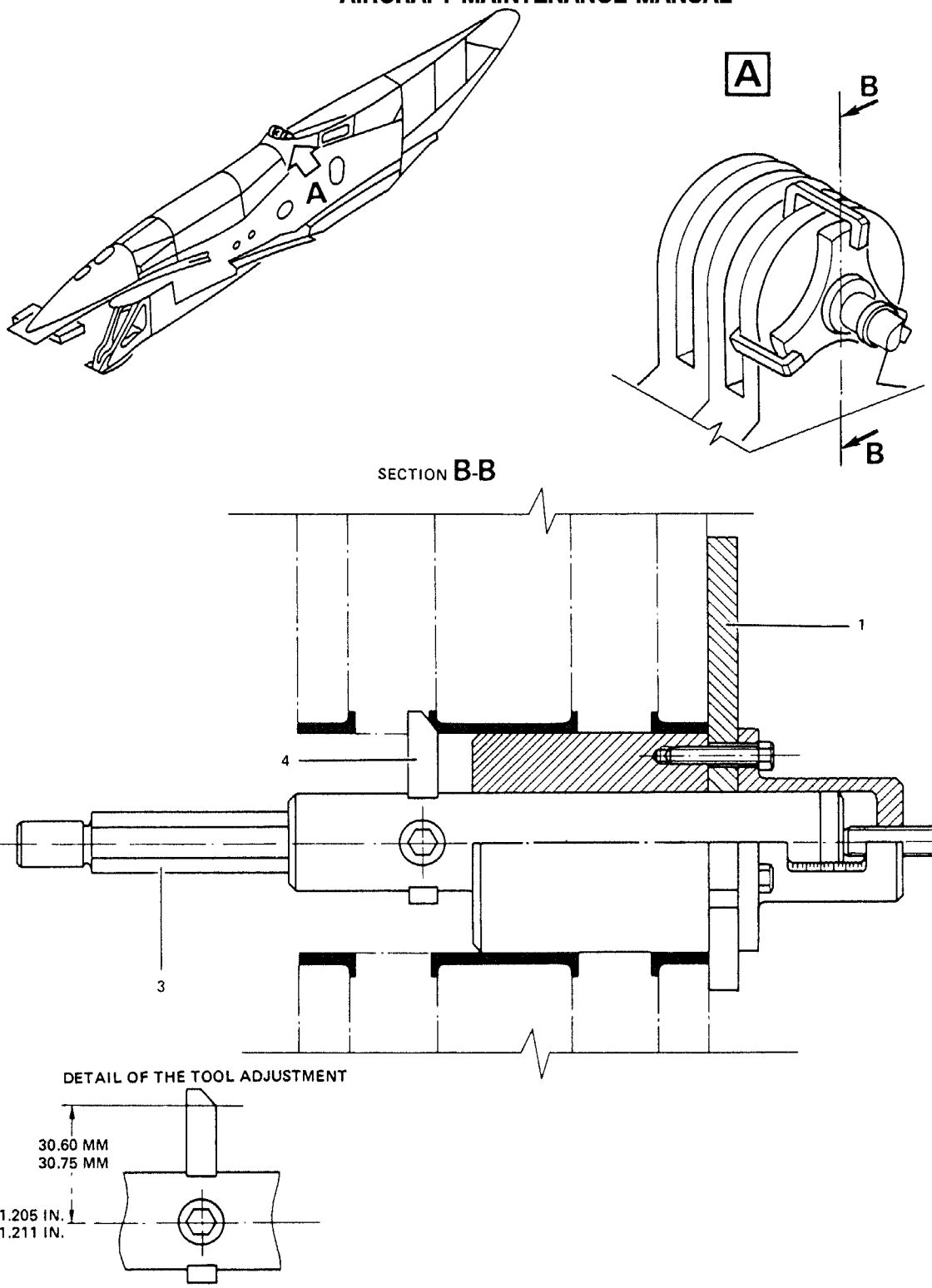
4 Inspect bores for wear, perform a dimensional check.
If diameter is out of original limits, para. 1.C.(2)(b). has to be accomplished.

(b)Reboring of RIB12 attach fittings with tool 98A54003083000.
(Ref. Fig. 808, 809)

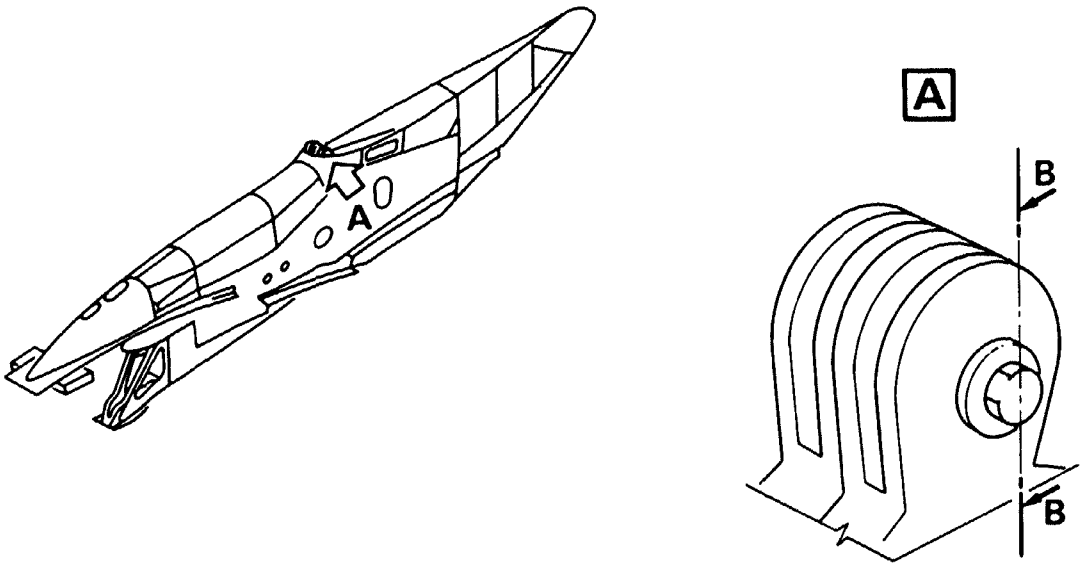
1 Installation of boring bar bearings (4) and clamps on attach fitting to be rebored.
- install centering/expandable bush assembly into hole of attach fitting
- tighten the centering adapter (3) to bring the expandable bush (2) into contact with the fitting hole
- check that centering adapter (3) is correctly installed
- install bearings (4) on ring of centering adapter (3) and on ring (5)
- install clamps in three points on bearings (4) on inner and outer lugs of RIB12 attach fitting
- untighten centering adapter and check that rings (3 and 5) turn freely in bearings (4). If not, align correctly centering adapter by means of the three tightening screws (1)
- clamp securely
- remove centering adapter (3).

2 Installation of the expandable bush for attachment of reboring unit.
(Ref. Fig. 810)
- on pylon attach fitting opposite to attach fitting to be re-bored, leave bushes in place and install expandable bush for attachment of the reboring unit
- lock with nut.

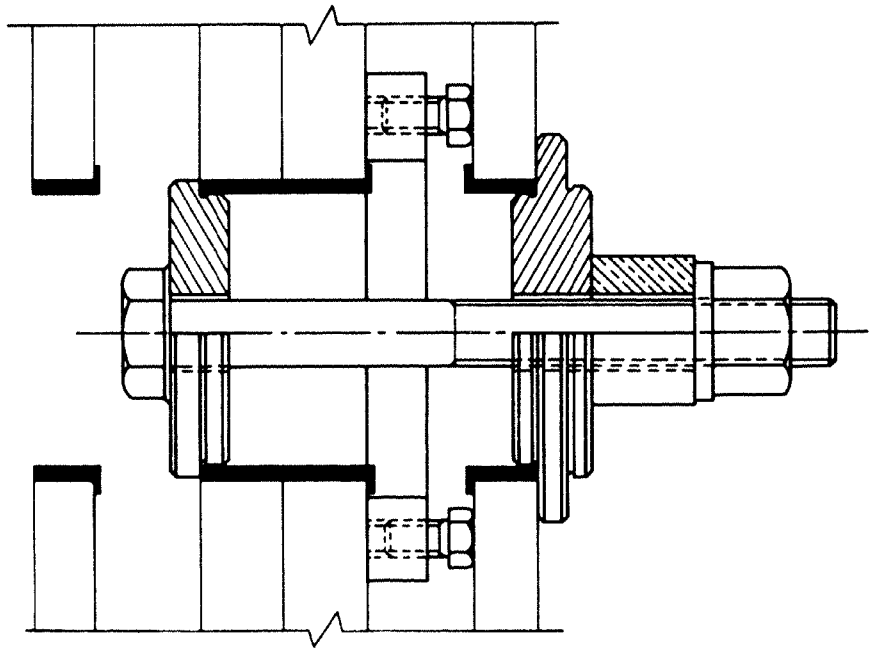
3 Zeroing of boring bar calibration tool.



Removal of Bush Shoulders
Figure 805



SECTION B-B



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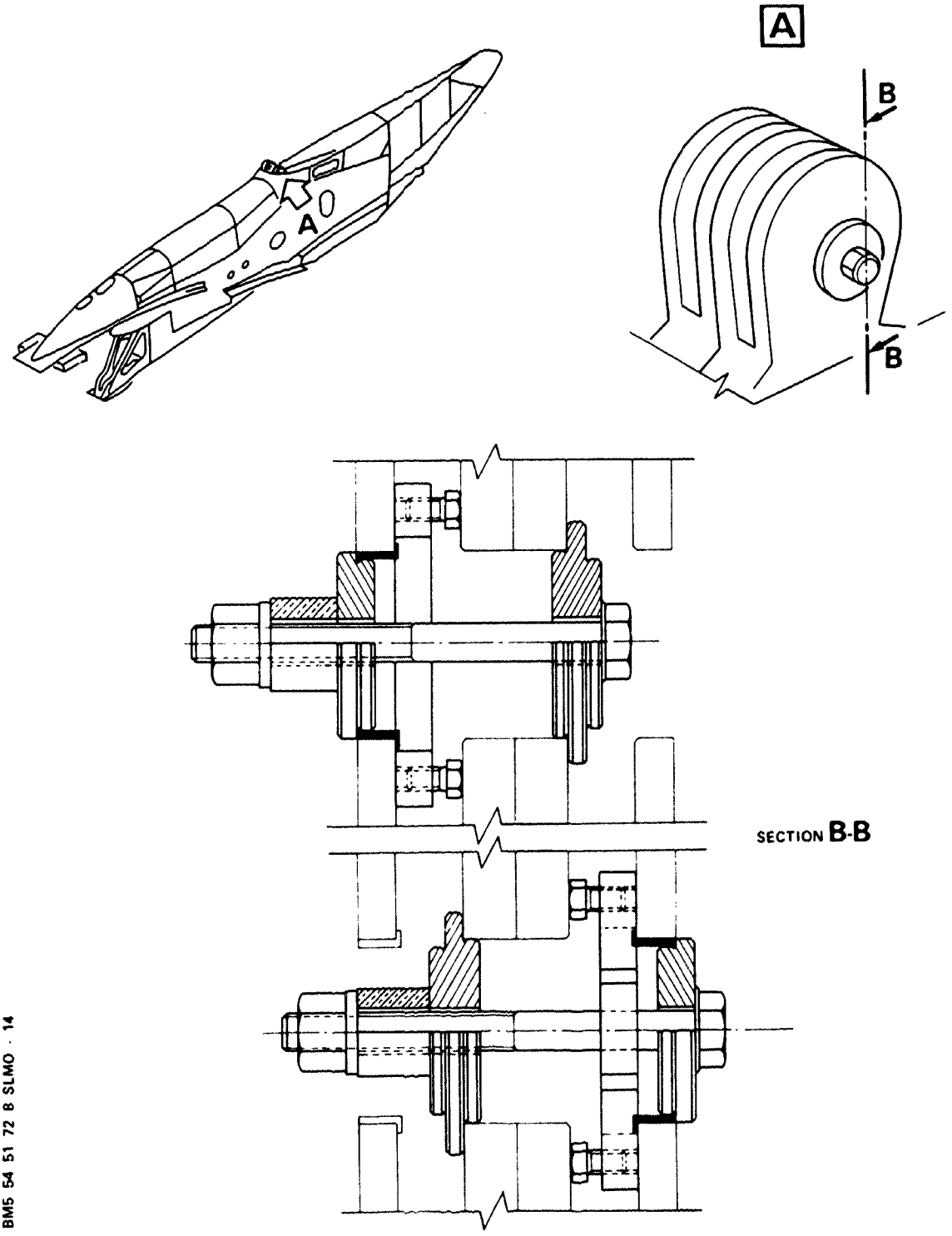
Extraction of Center Bushes
Figure 806



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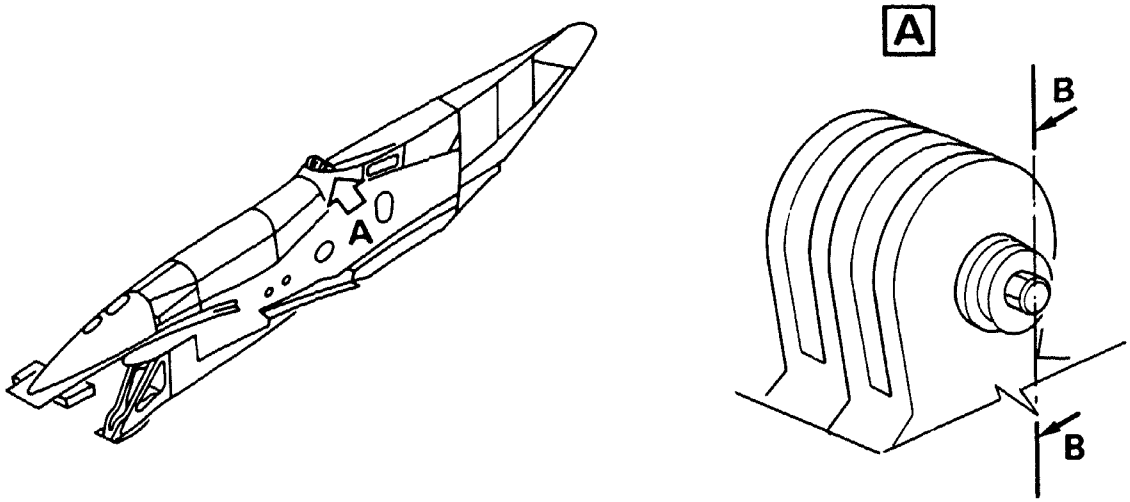
Extraction of Outer Bushes
Figure 807



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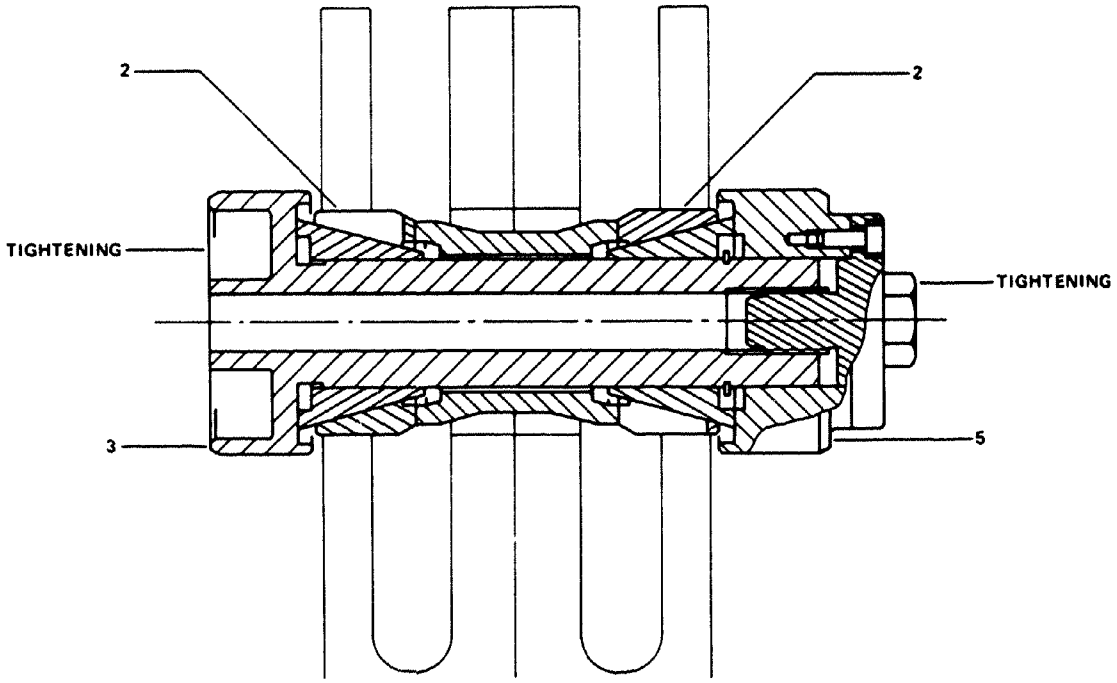

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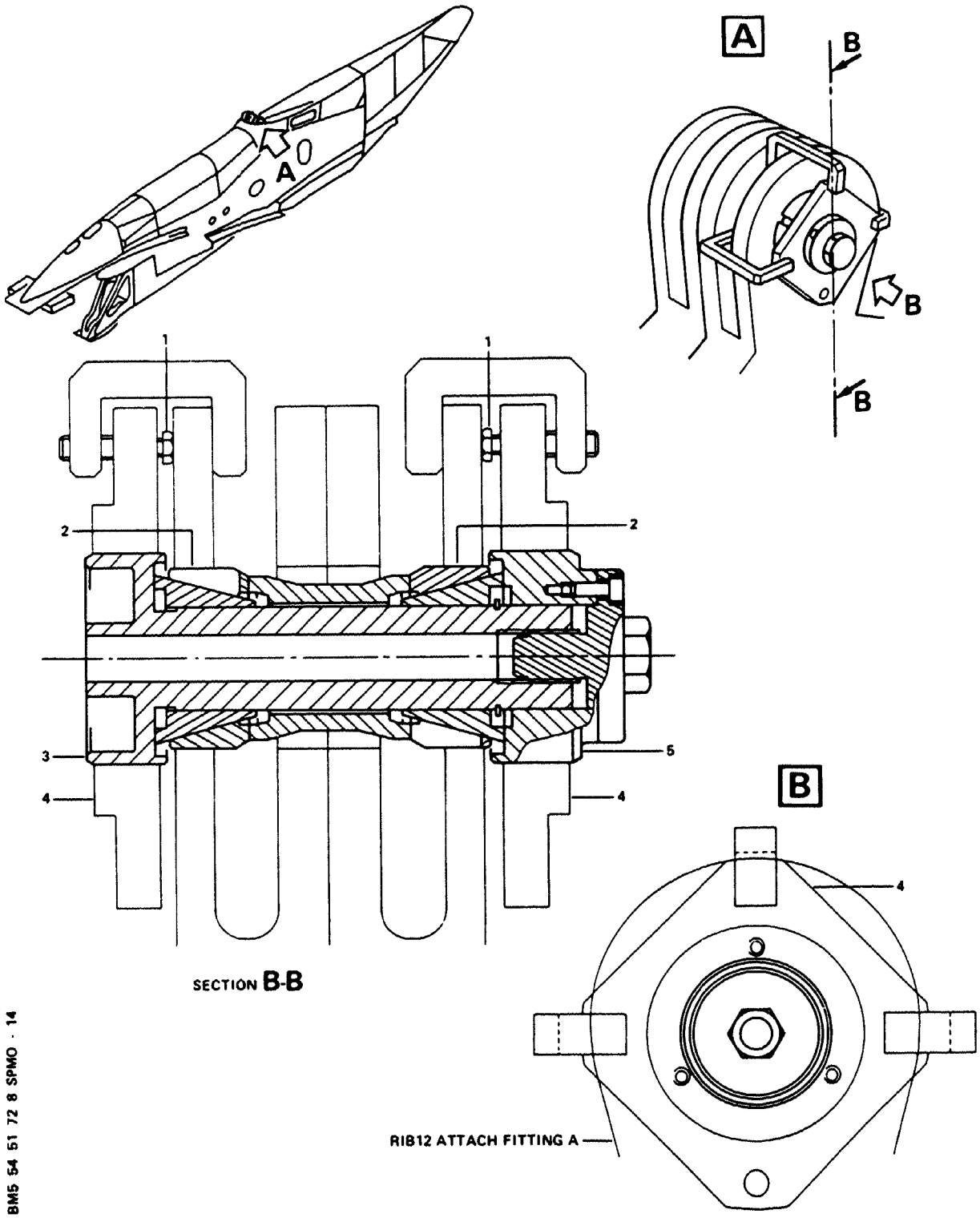
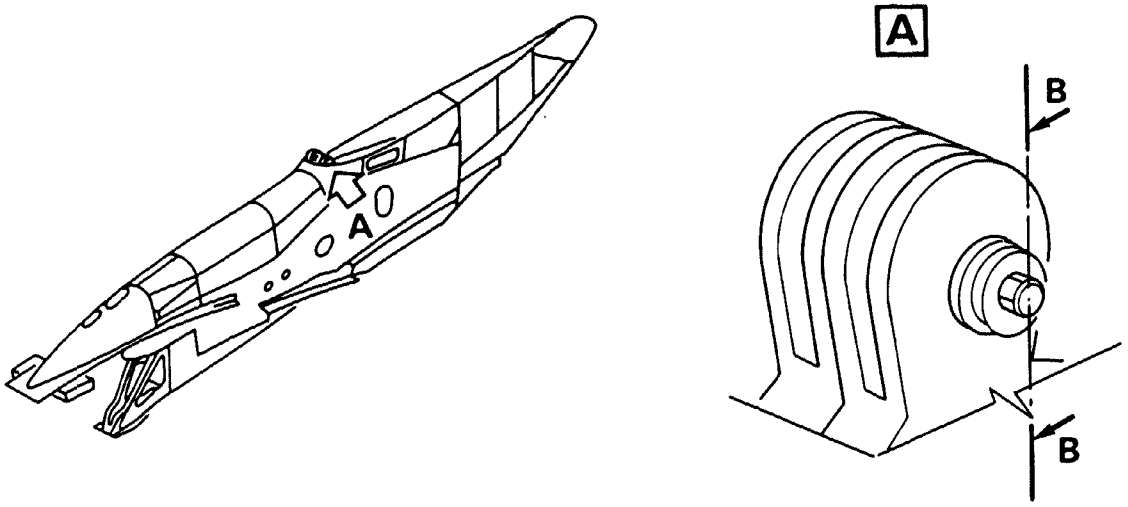
Installation of Expandable Bush Assembly for
Centering of Bearings
Figure 808



Installation of Boring Bar Bearings
Figure 809



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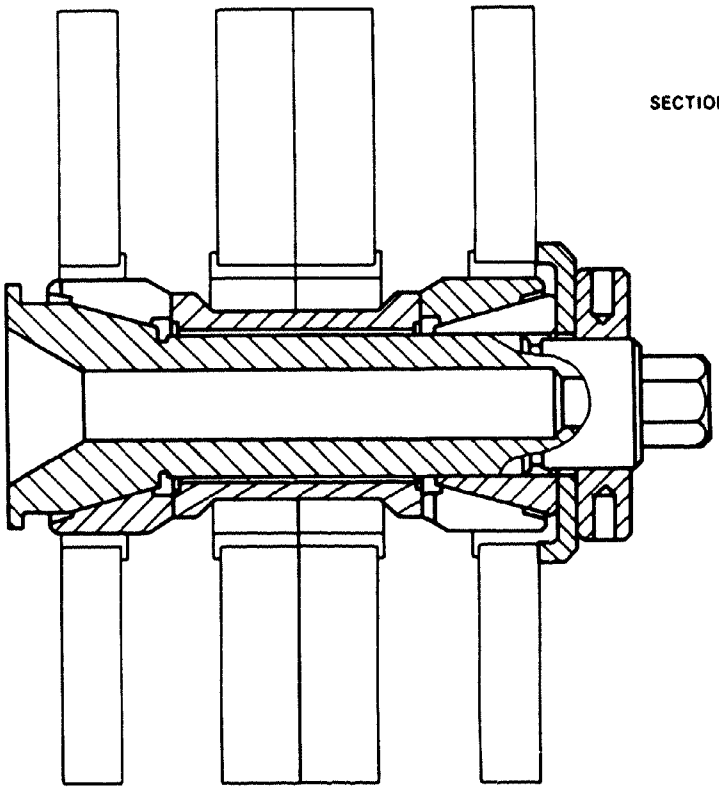


BM5 54 51 72 8 SRMO - 14

Installation of Expandable Bush for Attachment
of Reboring Unit
Figure 810

(Ref. Fig. 811)
NOTE : Prior to calibration, check that the master bar and Vee fitting supports are clean.
- install master bar on surface plate
- zero the calibration tool on the required diameter repair dimension
- after zeroing, remove master bar.

4 Calibration of the boring bar
- install tools with throwaway inserts ES SU46 for titanium machining
- install boring bar on surface plate
- calibrate the three tools one after the other, using the micrometer screw located aft. The tools must be calibrated according to the minimum repair dimension
- turn slightly the boring bar so as to displace and position the end of the tool against the feeler plunger to obtain the most accurate calibration
- securely tighten tool body with micrometer screw. Check repair dimension after tightening.

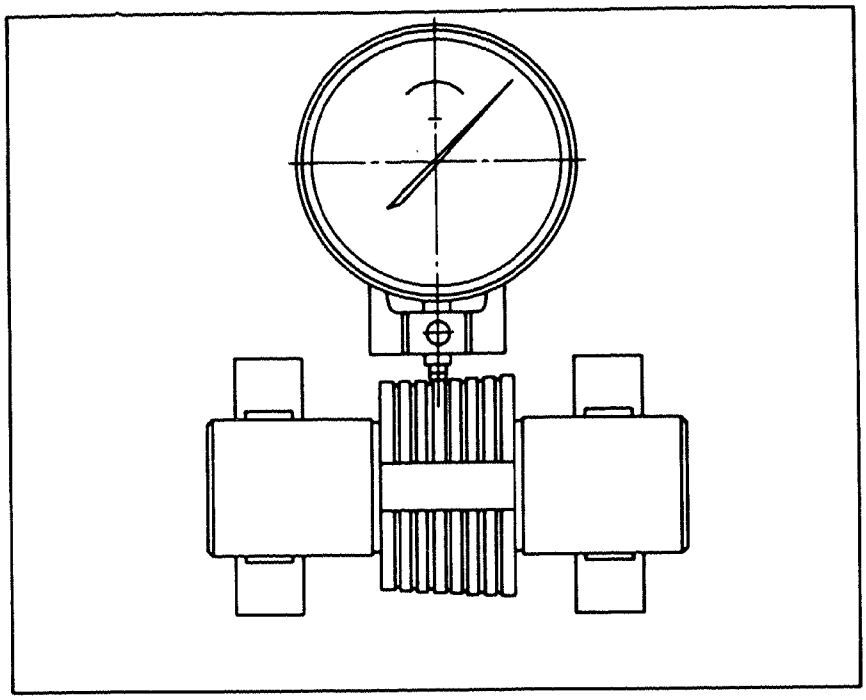
NOTE : Calibrate tools with extreme care.
The quality of the reboring depends on the accuracy of this adjustment.

5 Installation of the boring bar.
(Ref. Fig. 812)
- insert boring bar in hole of pylon attach fittings ; this must be done carefully not to damage tool ends
- position bar on hole bottom, tools up
- install rings (1)
- lock rings on bearings (2)
- check that boring bar turns freely.

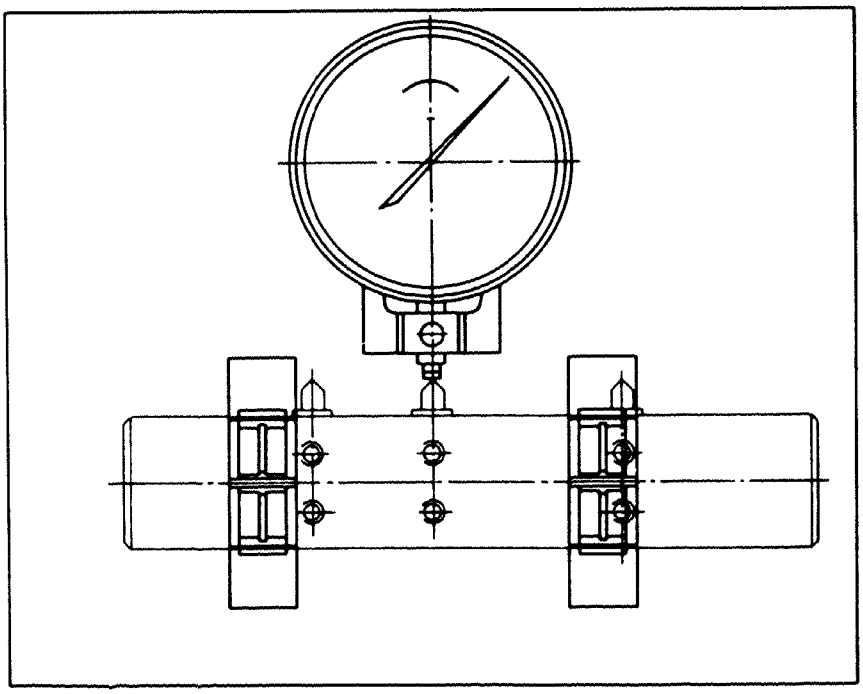
6 Installation of boring unit
(Ref. Fig. 813)
- position boring unit on centering adapter and connect air pressure source
- place spindle screw into the nose
- using a 5mm (0.20 in.) dia. rod, align holes in spindle screw, nose and safety nut
- install connecting pin
- tighten safety nut.

7 Reboring of pylon attach fittings at RIB12.
(Ref. Fig. 814)
- start-up boring unit with the air valve in open position
- monitor the operation and lubricate. When the end of the boring bar is at 27mm (1.06 in.) of the outer ring face, stop the operation.

8 Removal after boring.
- the boring bar is at the end of travel position
- remove pin connecting the bar to the spindle screw
- start-up the unit with the air valve in rapid-retraction position



CALIBRATION



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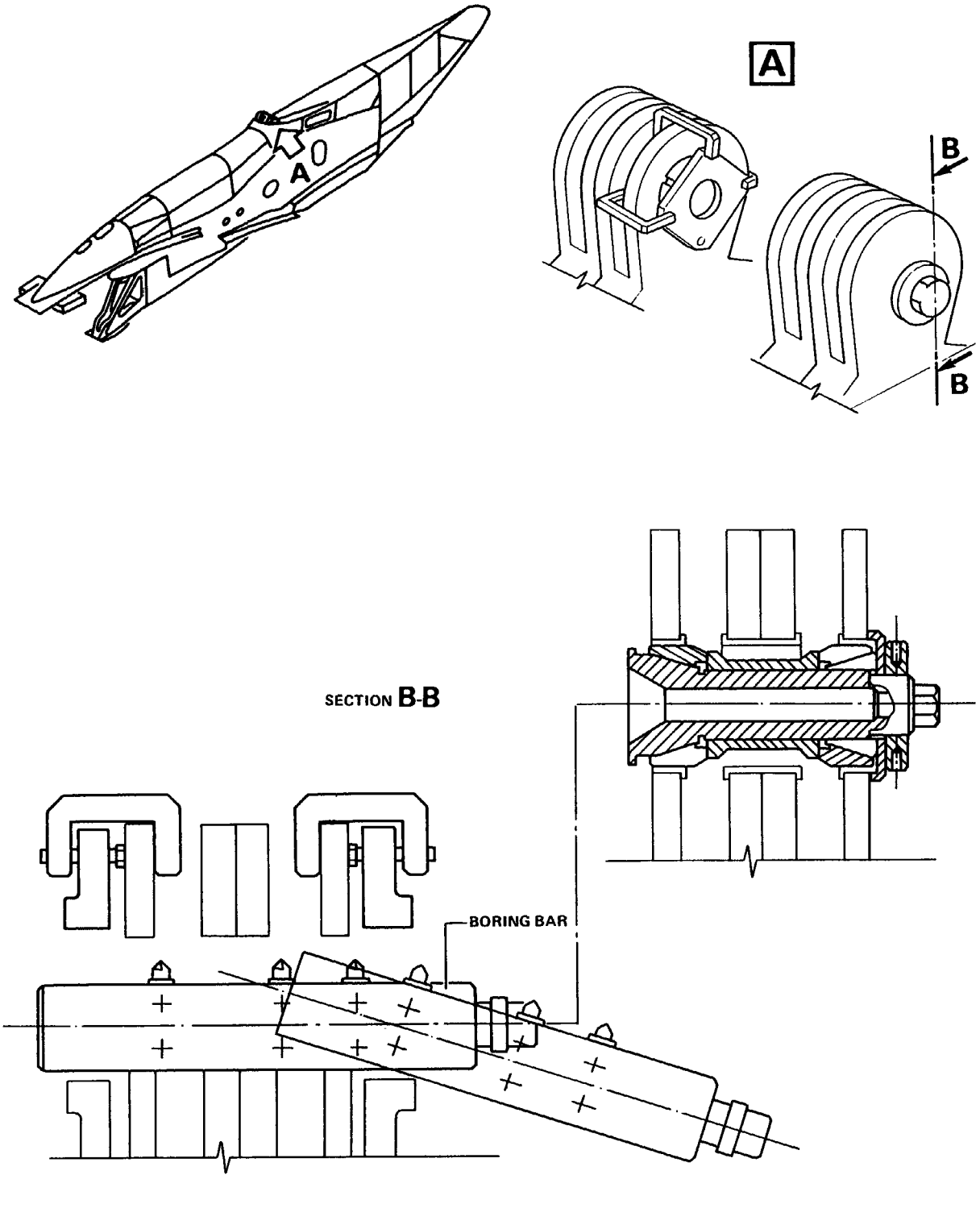
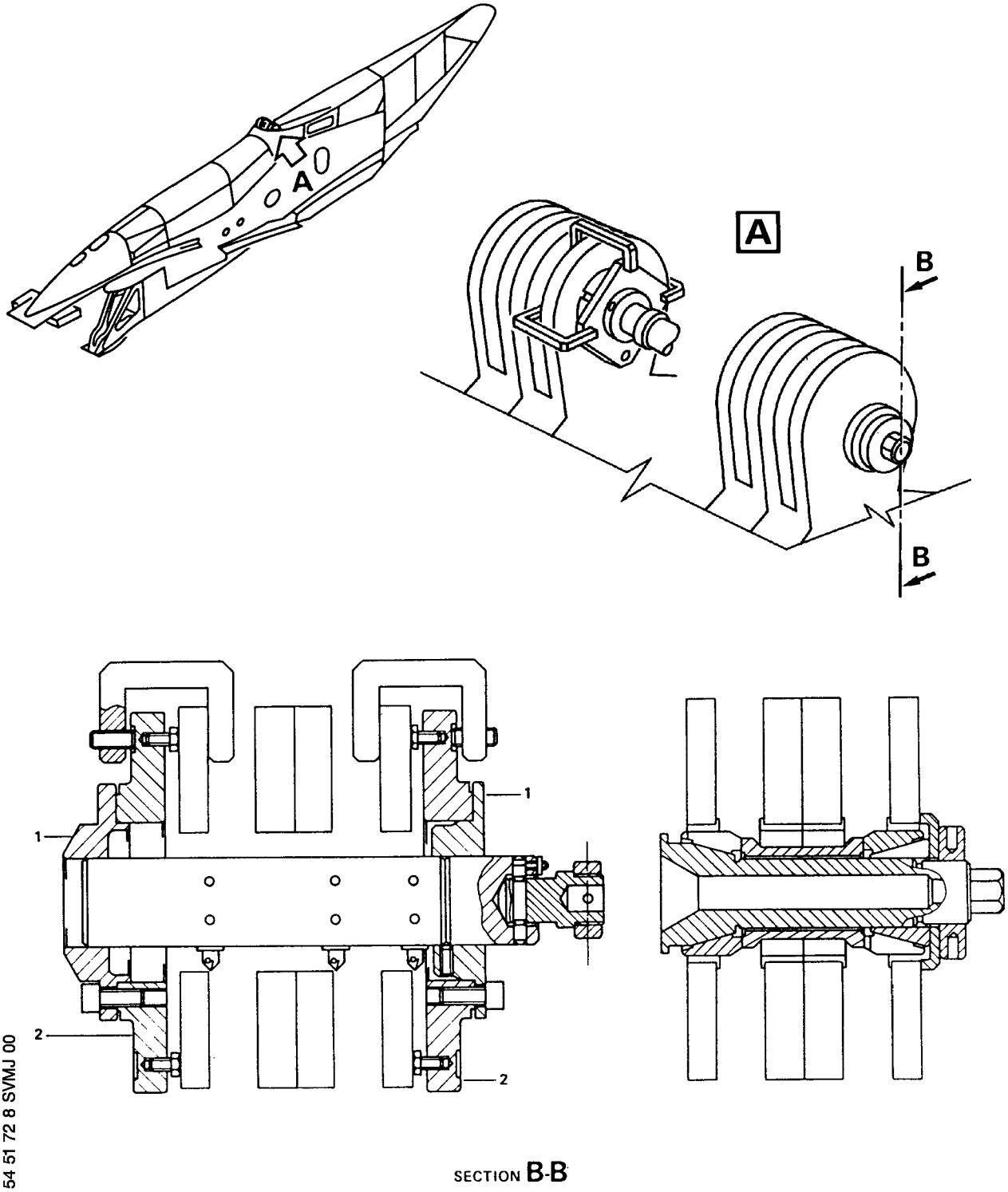
Zeroing of the Calibration Tool (for Reboring the Fitting)
Figure 811

R



Installation of Boring Bar (Sheet 1/2)
Figure 812

R



Installation of Boring Bar (Sheet 2/2)
Figure 812

R

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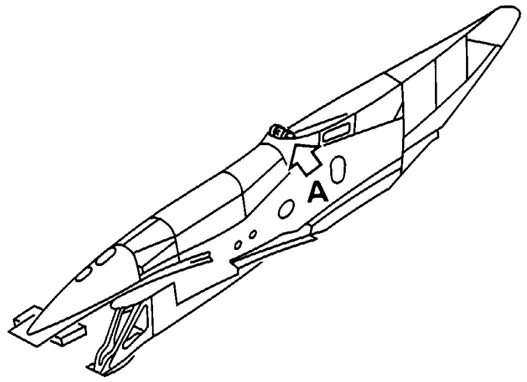
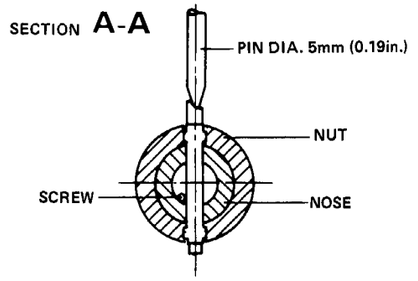
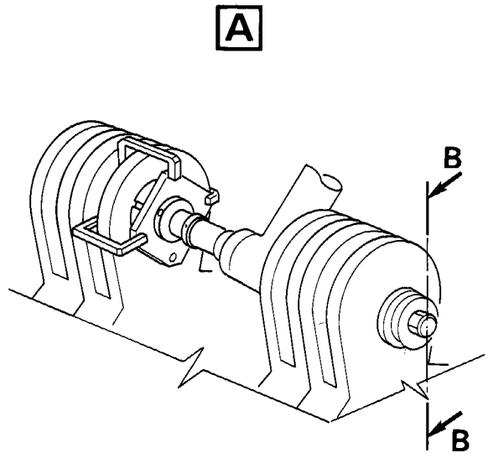
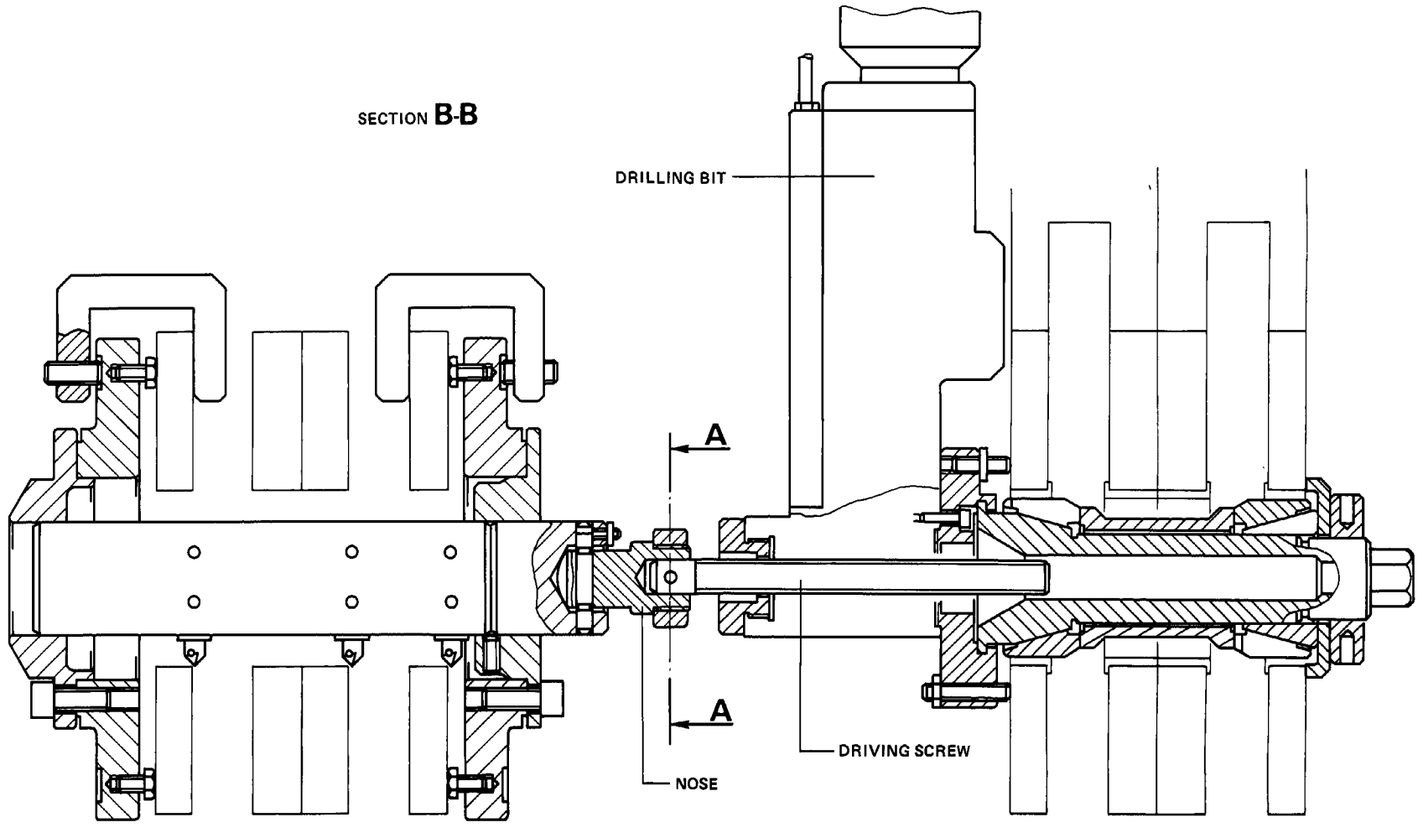


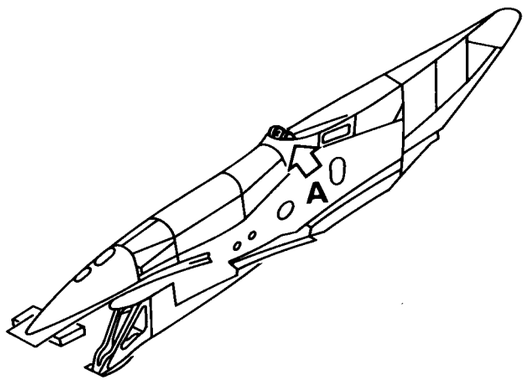


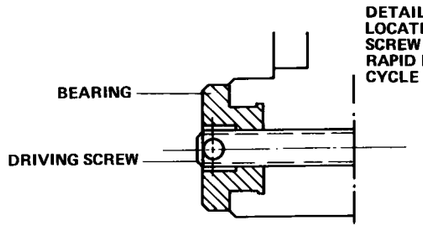




Installation of Boring Unit (for Reboring the Fitting)
Figure 813

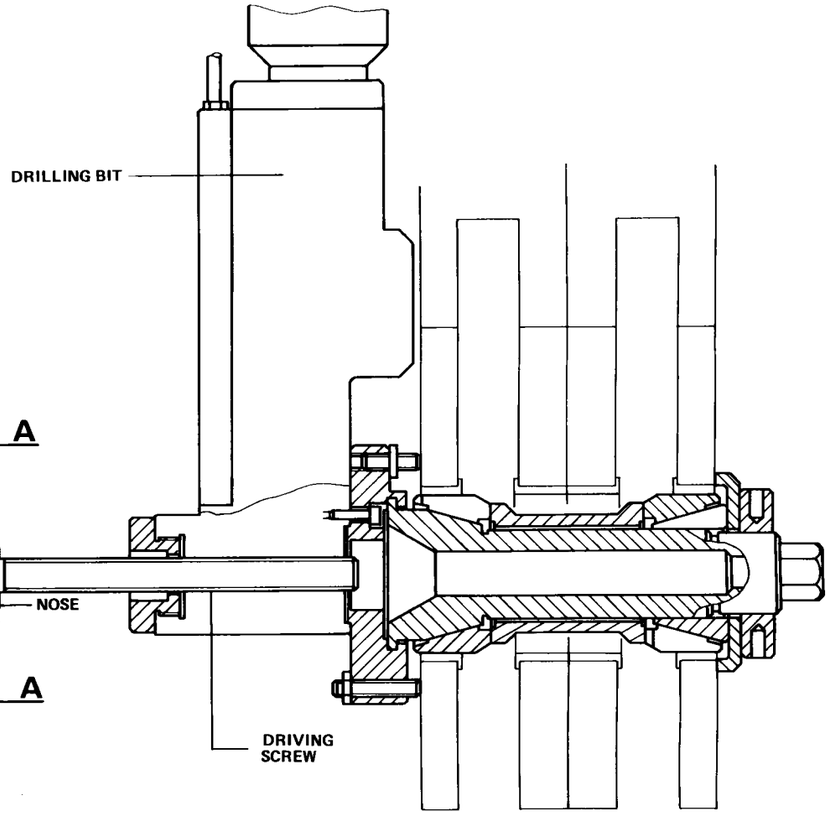
R

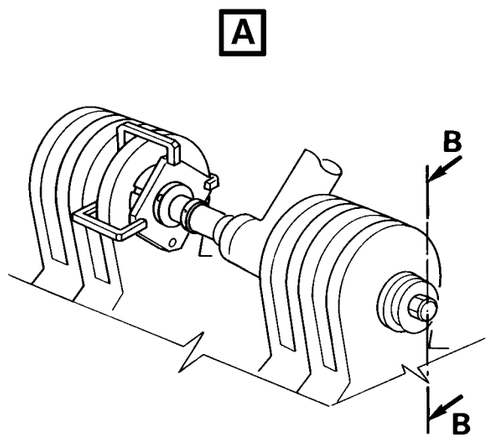




SECTION A-A

SECTION B-B





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Position of the Tools at the End of the Boring
(for Reboring the Fitting)
Figure 814

R

CAUTION : ON THE RETURN MOTION, BE CAREFUL NOT TO SEND BACK THE SPINDLE SCREW TOO FAR SO AS TO AVOID JAMMING OF THE BORING UNIT GEARS.
THE RETRACTION MUST BE STOPPED WHEN THE CONNECTION HOLE IS HIDDEN BY THE BEARING INSTALLED ON THE NOSE OF THE BORING UNIT.

- remove the unit
- remove inner and outer centering rings
- remove boring bar
- the centering bearings remain in place
- check boring.

9 Chamfering of bores in attach fitting with tool 98A54003094000. (Ref. Fig. 815, 816)

NOTE : The procedure is identical for the four chamfers. Only the chamfering tool differs. Sub-assembly tool 98A54003094113 is used for outer attach fitting machining and sub-assembly tool 98A54003094114 for inner attach fitting.

- install expandable bush (2). Slightly tighten nut (3) so that the expandable bush (2) can still slide inside the hole
- remove expandable bush (2) from attach fitting
- out of the attach fitting, adjust cutter (8) in working position. A correct adjustment is obtained when the body of cutter (8) is flush with the chamfering bar (6)
- lock cutter (8)
- insert chamfering bar (6) on one side of the attach fitting to be chamfered and expandable bush (2) on the opposite side
- install control screw (5), screw threaded ring (4) on expandable bush (2) body
- use control screw (5) to align reference mark on bar (6) with a graduation on expandable bush (2)
- displace tool assembly inside attach fitting so that cutting side of cutter is in contact with the edge of attach fitting to be chamfered

NOTE : Actions described in 7 and 8 are recommended for an easier evaluation of the value of the chamfer when chamfering.

- turn control screw (5) to move back cutter from attach fitting
- lock expandable bush (2) by tightening nut (3)
- place cutter in contact with edge to be chamfered, turn the cutter by hand and check that it contacts all the hole periphery
- install stops (1)
- install drive unit on spindle (7)
- start-up unit and machine chamfer while controlling cutter progression with control screw (5)
- move back cutter and stop drive unit
- remove drive unit
- untighten cutter on bar (6) and position it in such a way that the bar can be removed
- untighten threaded ring (4) and remove control screw (5)
- remove bar (6)
- remove stops (1)
- remove expandable bush (2)

- clean carefully the machining area with Material No. 11-003 and deburr if necessary.

(c)Installation of attach fitting bushes.

CAUTION : INSTALL INNER BUSHES BEFORE OUTER ONES.

1 Install repair size bushes with liquid nitrogen and using tool 98A54003063000.
(Ref. Fig. 817)

(d)Reboring of bushes with tool 98A54003083000.

1 If the boring bar bearing (4) and clamps are not installed on the attach fitting, install them (refer to paragraph 1.C.(2)(b)).
(Ref. Fig. 808, 809)
NOTE : As bushes are shouldered, they cannot be rebored simultaneously. Reboring will be performed in two steps :
- simultaneous reboring of inner and outer bushes
- reboring of center bushes.

2 Zero reboring bar calibration tool with master bar 98A54003083204 (nominal diameter : 56mm (2.20472in.). Tolerance H7 : +0, +0.030 mm (+0,+0.00118 in.)).
Refer to paragraph 1.C.(2)(b)3.
NOTE : Item 98A54003083204 is a sub-assembly of 98A54003083000.

3 Install on reboring bar the two outer cutters fitted with inserts for beryllium bronze machining. Adjust according to paragraph 1.C.(2)(d)4.
(Ref. Fig. 818)
NOTE : Cutters must be adjusted to between 0.01 and 0.015mm (0.00039 and 0.00059 in.) above the minimum reboring diameter.

4 Install boring bar referring to paragraph 1.C.(2)(b)5.

5 Install boring unit referring to paragraph 1.C.(2)(b)6.

6 Rebore outer bushes referring to paragraph 1.C.(2)(b)7.
(Ref. Fig. 819)
Boring is over when boring bar is 10 mm (0.39 in.) out of the centering bush.
(Ref. Fig. 819)

7 Remove boring bar referring to paragraph 1.C.(2)(b)8.

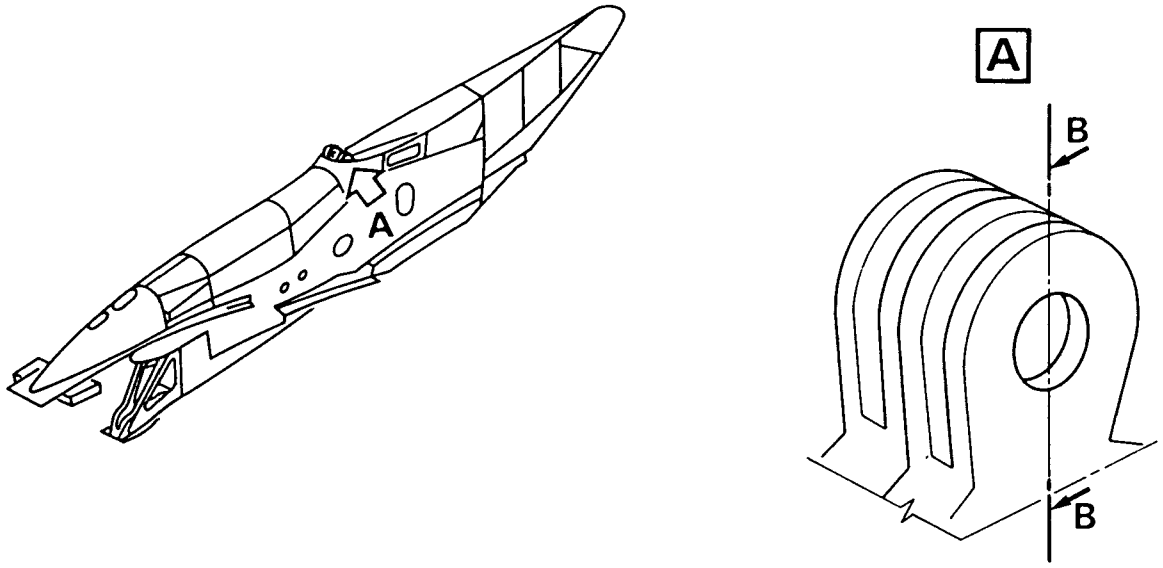
8 Bring in outer cutters and install center cutter for machining of attach fitting center bushes

9 Adjust center tool, referring to 1.C.(2)(b)4.
NOTE : Cutter must be adjusted to between 0.01 and 0.015 mm (0.00039 and 0.00059 in.) above the minimum reboring diameter.

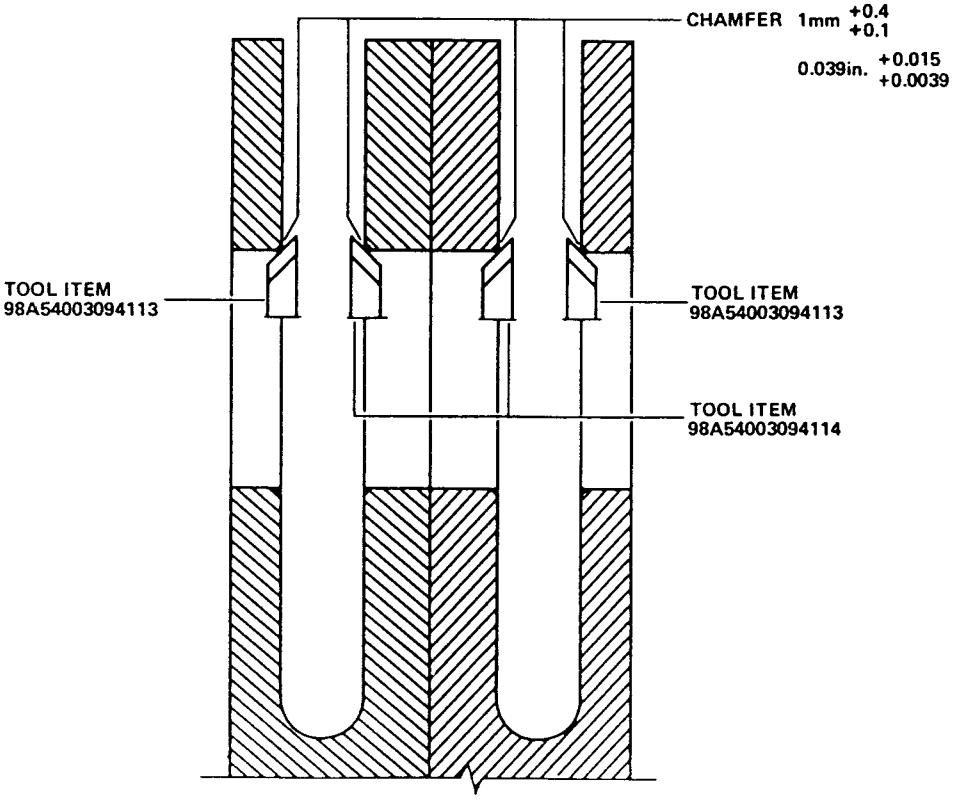
10 Install boring bar and boring unit referring to paragraphs 1.C.(2)(b)4 and 1.C.(2)(b)6.

11 Rebore center bushes. Boring is over when boring bar is 28 mm (1.1 in.) out of the centering bush.
(Ref. Fig. 820)

12 Remove boring tool assembly :
- remove boring unit
- remove centering rings
- remove boring bar
- remove centering bearings
- remove expandable bush for attachment of boring unit
- check cutters
- clean components



SECTION B-B



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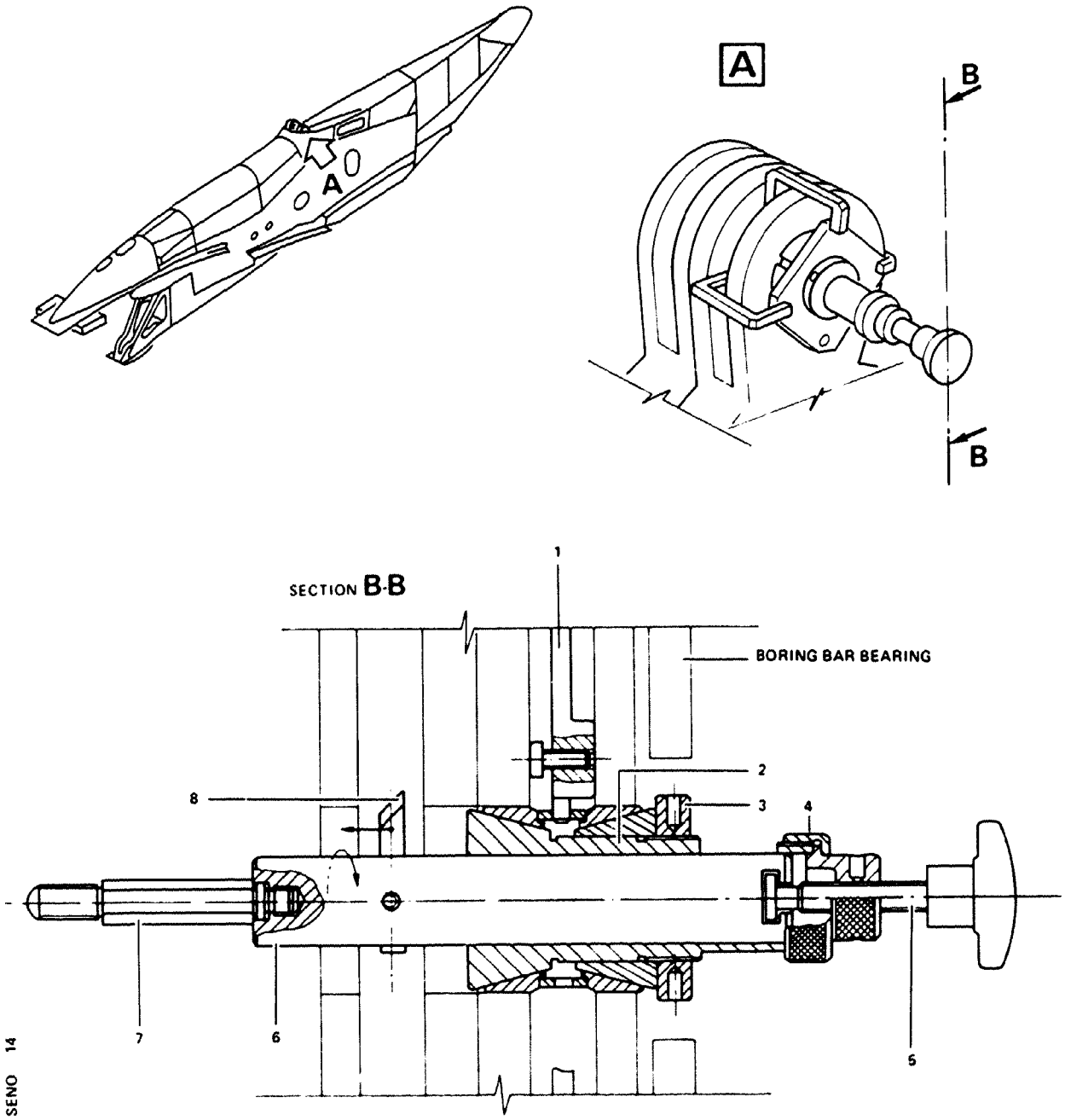
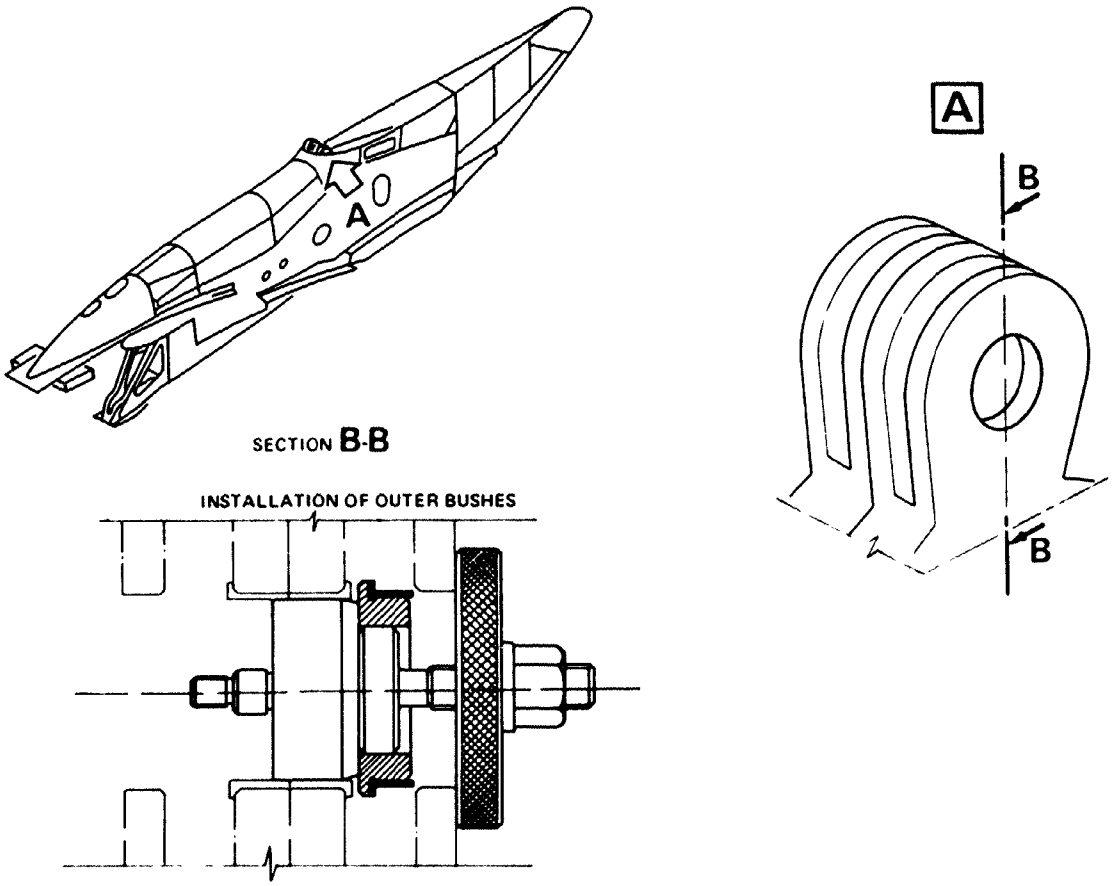
Chamfering of Attach Fitting
Figure 815

R

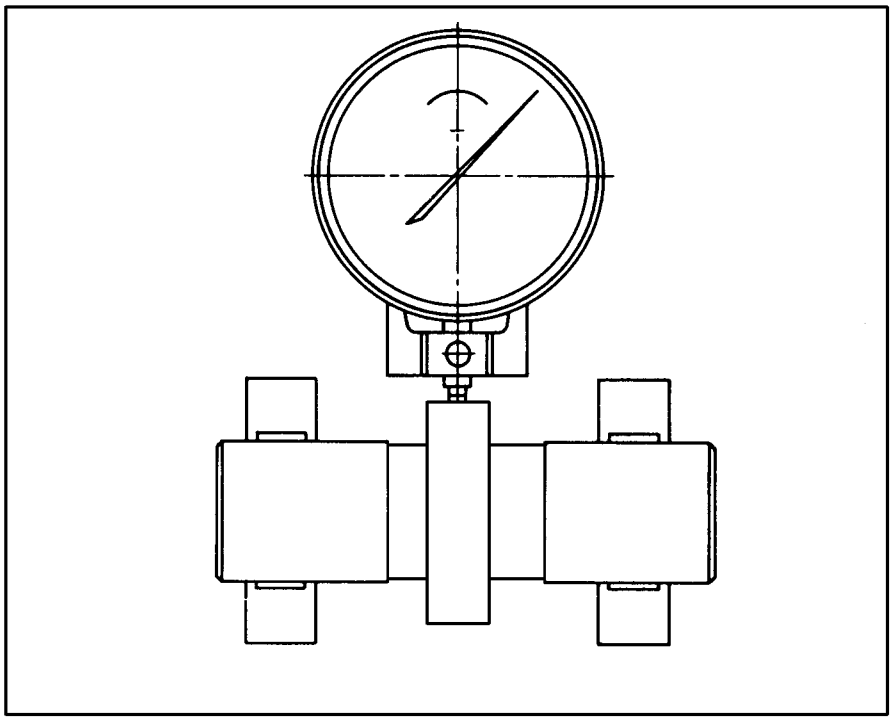


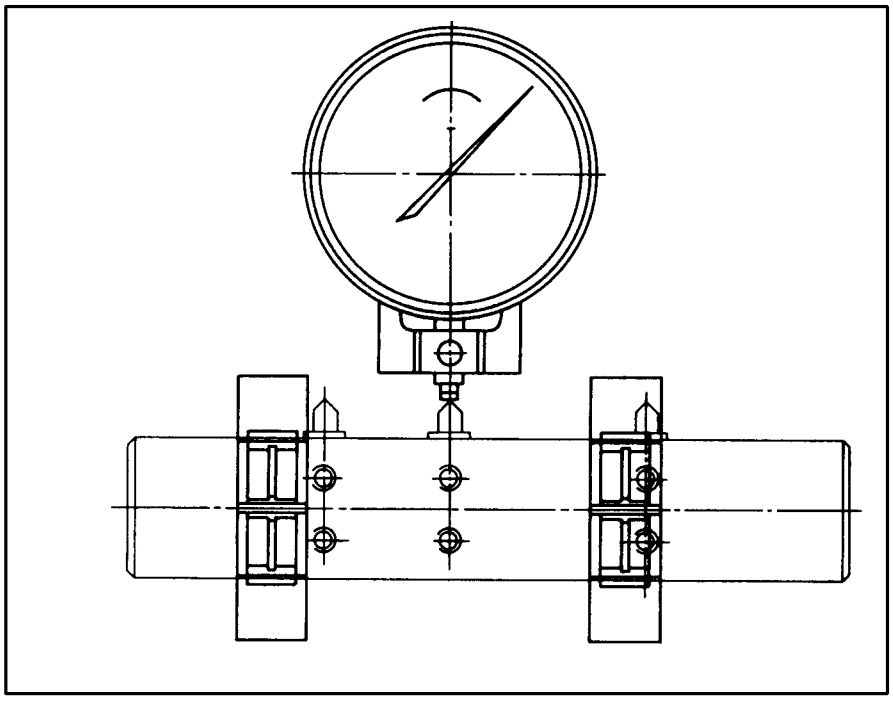
Chamfering Tool
Figure 816



BMS 54 51 72 8 SGNO 14

Bush Installation Tool
Figure 817





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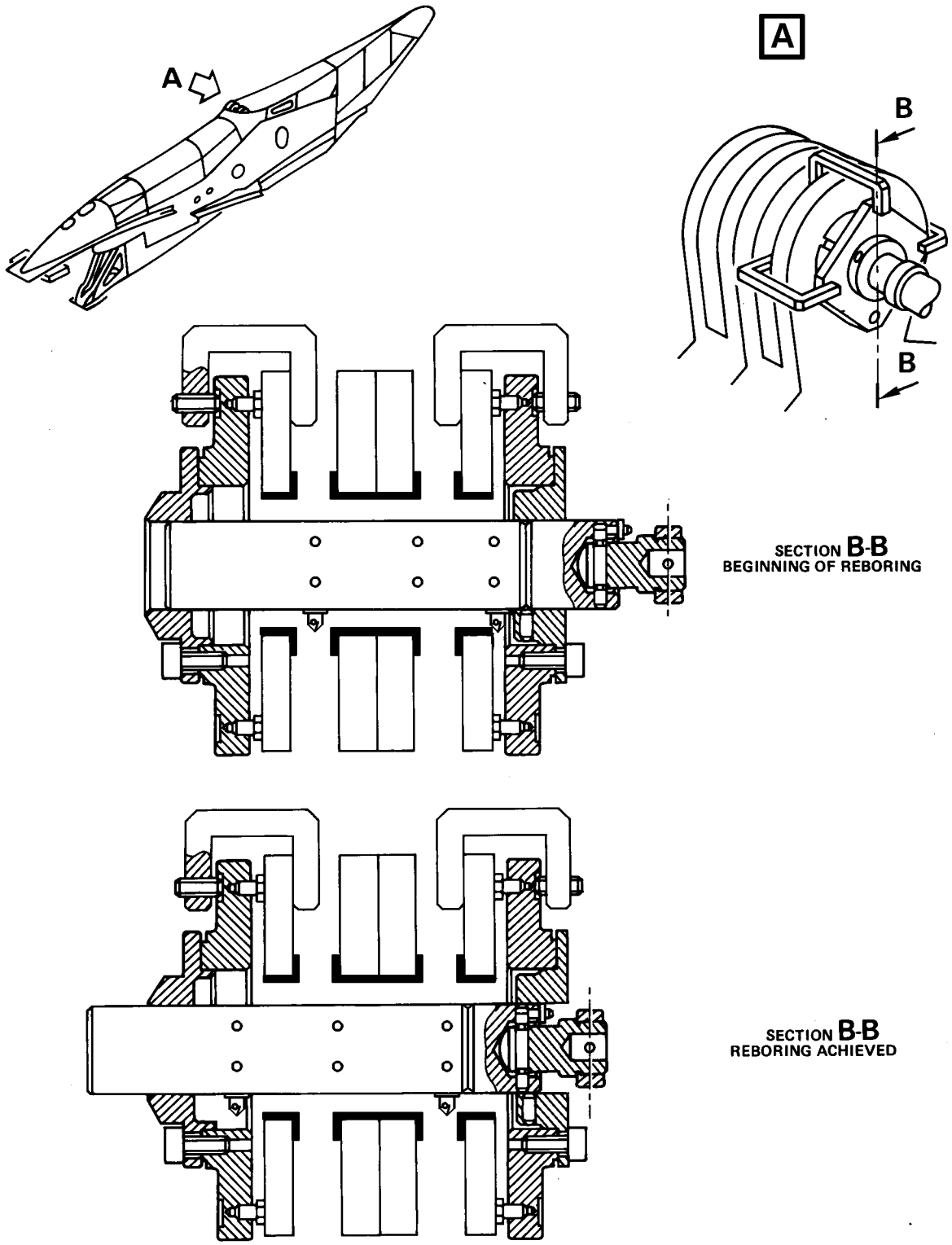
R Zeroing of the Calibration Tool (for Reboring the Bushes)
Figure 818



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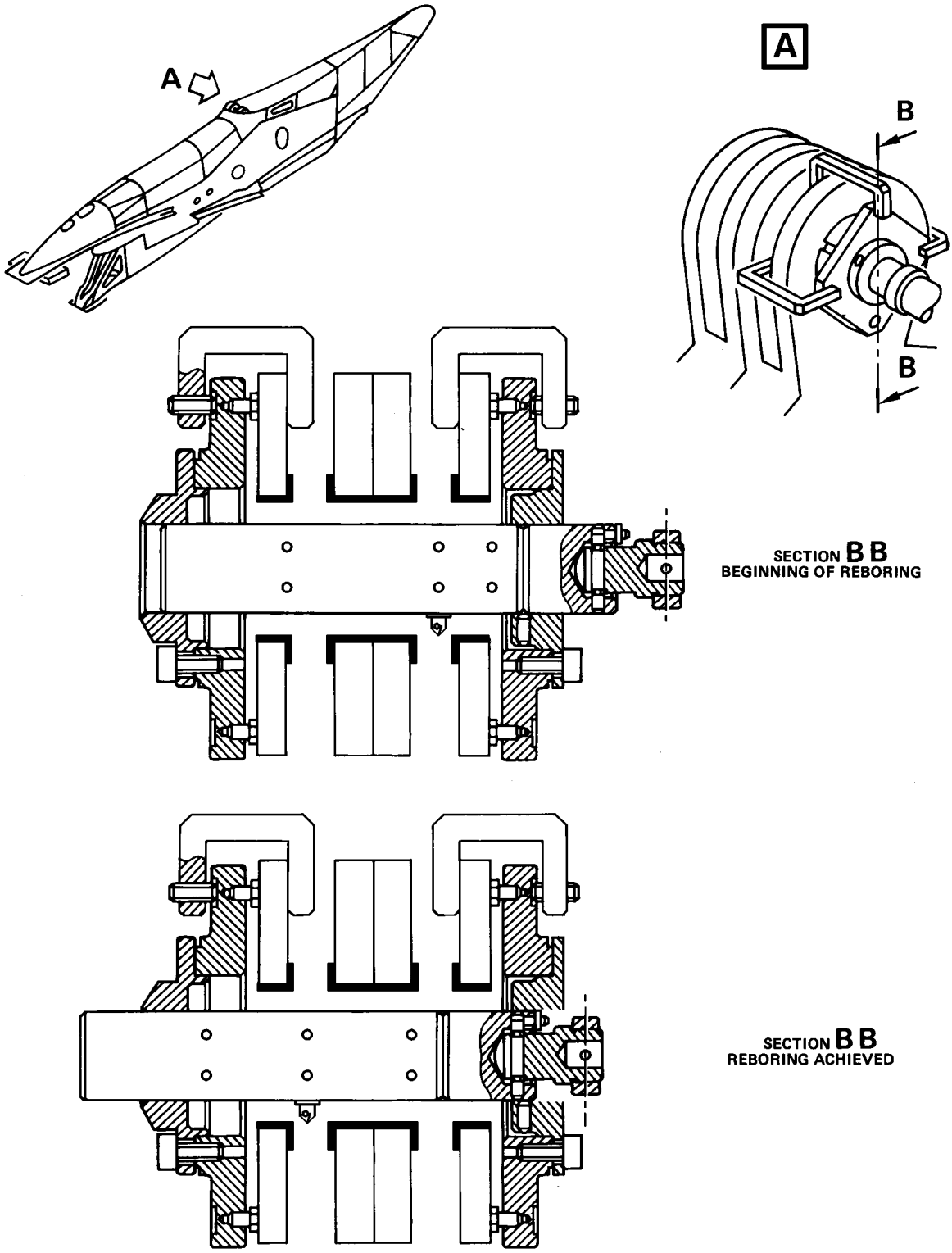
Reboring of Outer Bushes
Figure 819

R



BM5 54 51 72 8 SLN0 01

Reboring of Center Bushes
Figure 820

R

- stow away tools in storage container.

13 Check bore.
- clean thoroughly with Material No. 11-003
- carefully deburr edges of bushes (0.1 to 0.3 mm max. (0.0039 to 0.0118 in. max.)) using tool 98A54003029101 or 98A54003029103 which serves also for removal of shoulder on bush.

(3)Close-up

(a)Install fail-safe fasteners into attach fittings of RIB12 (Ref. 54-51-72, P. Block 401).

(b)Install throttle control electrical cables. Install clamps on electrical cables.

(c)Install air bleed duct shield.

(d)Install clamps and electrical cable.

(e)Install the section of fuel line located between inboard and outboard attach fittings of engine pylon and connect fuel line as follows:

CAUTION : FUEL LINES MUST NOT SHOW EVIDENCE OF SHARP BENDS, PUNCHMARKS, OR DEFORMATION.

NOTE : Replace all o-rings at upper, center and lower connections

1 Install fuel line at level of wing as follows:
- Engage fuel line at level of wing.
- Install flange (41), nuts (43) and bolts (44). Tighten bolts (44).
- Tighten coupling nut (40).

2 Install fuel line on pylon upper spar as follows:
- Engage fuel line at level of pylon.
- Install washers (48) and screws (49). Tighten screws (49).

3 Connect coupling halves (42) as follows :
- Tighten coupling nuts (9).
- Slide on the sleeves of the coupling halves (42).
- Install the four half-shells (7).
- Connect bonding leads (6) (Ref. 20-28-11, P. Block 1).
- Install bolts (50), washers (46) and nuts (47). Tighten bolts (50).
- Install nuts (45). Tighten nuts (45).

4 Carry out a leakage test of double wall fuel line (Ref. 28-21-00, P. Block 501).

(f)Install air bleed duct elbow and air bleed duct located between wing RIB6 and RIB8 (Ref. 36-11-00, P. Block 401) (Ref. Fig. 801).

(g)Install sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21 and 36-21-13, P. Block 401). (Ref. Fig. 801)

(h)Remove plugs and connect electrical connectors (13) from high stage pressure sensors 47HA (48HA) (Ref. Fig. 802).

(i)Make certain that working area is clean and clear of tools and miscellaneous items of equipment. Install panels removed in paragraph 1.C.(1).

(j)Retract flap and slats (Ref. 27-80-00, P. Block 301).

(k)Install engine (Ref. 71-00-00, P. Block 401).

(l)Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).

(m)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

(n)Remove access platform.

2. Replacement of the Bushes of the Shackles at RIB12

NOTE : This procedure is identical for left and right pylons.

R A. Equipment and Materials

ITEM	DESIGNATION
(1)Material No. 08-029	Bonding and Adhesive Compounds (Ref. 20-31-00)
(2)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedure - 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)

R B. Job Set-Up
R (1)Remove the shackles at RIB12 (Ref. 54-51-72, P. Block 401).

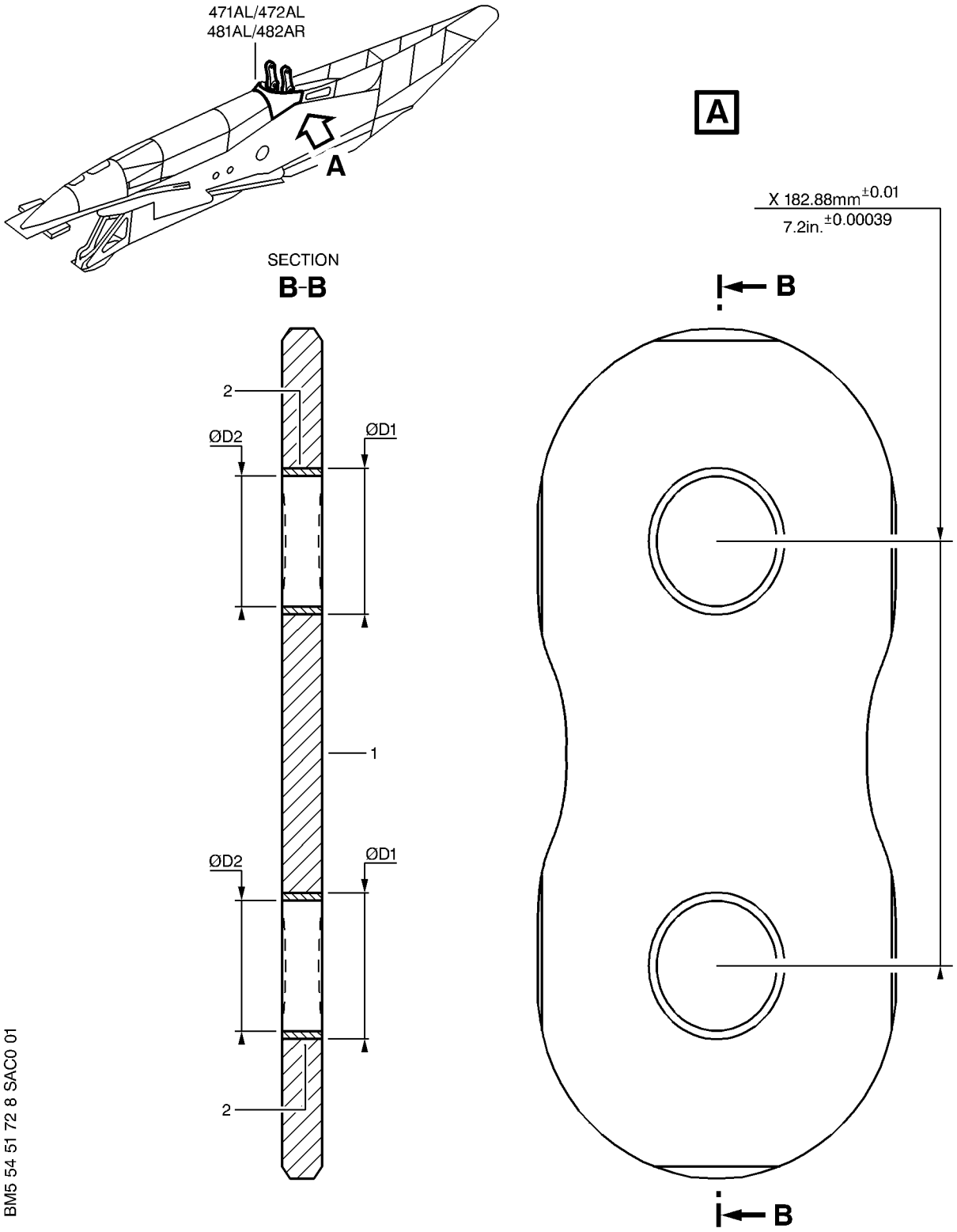
R C. Procedure
R (Ref. Fig. 821)
R (1)Remove the bushes (2) from the shackle (1).
R (2)Clean the shackle (1) with Material No. 11-003.
R (3)Visually inspect the shackle bores and make sure that there is no damage.
R (4)Measure the diameters D1 of the shackles bore and make sure that the diameter D1 is (nominal diameter : 62 mm (2.4409 in.).
R Tolerance H7 : + 0, + 0.030 mm (+ 0, + 0.00118 in.).
R (a)If the diameter D1 is not in the tolerance, bore the shackle (1) to repair size diameter given in table 802 :

REPAIR SIZE	NOMINAL VALUE OF THE BORE D1 IN MM (IN.)	TOLERANCE IN MM (IN.)
R1	62.2 (2.4488)	H7 : + 0.030 (+0.00118) + 0 (+0)
R2	62.4 (2.4566)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	62.6 (2.4645)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	62.8 (2.4724)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	63 (2.4803)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	63.4 (2.4960)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	63.9 (2.5157)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	64.4 (2.5354)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 802
Repair Sizes of the Shackles at RIB12

R (5)Apply a cadmium plating (protection code 123) in the
R shackle bore holes.
(6)Quench the new bushes (2) in the liquid nitrogen.
(7)Install bushes (2) in the shackle (1) with Material No. 08-029.
(8)Rebore the bushes (2) to the diameter D2 (nominal diameter : 56 mm (2.2047 in.). Tolerance H7 : + 0, + 0.030 mm (+ 0, + 0.00118 in.).
(9)Respect the center-to-center distance X of 182.88 mm (7.2 in.) (+ 0.01, - 0.01 mm) (+ 0.00039, - 0.00039 in.).
(10)Clean the shackle (1) with Material No. 11-003.

D. Close-Up
(1)Install the shackles at RIB12 (Ref. 54-51-72, P. Block 401).



Bushes of the Shackles at RIB12
Figure 821

R

FORWARD ATTACH FITTING (RIB12)
APPROVED REPAIRS

1. Replacement of the Bushes of the Forward Attach Fitting at RIB12

   WARNING : SPECIFIC ENVIRONMENTAL CONTROL AND EQUIPMENT IS REQUIRED WHEN PERFORMING GRINDING/SANDING/HONING OPERATIONS ON THESE BUSHES, AS THEY CONTAIN COPPER BERYLLIUM, AND MAY GENERATE TOXIC BERYLLIUM DUST.

   NOTE : This procedure is identical for left and right pylons.

   NOTE : On the pylon attach fitting opposite to the attach fitting to be re-bored, leave bushes in place. If necessary, repeat the procedure for the opposite side attach fitting.

   A. Repair sizes of attach fittings at RIB12

      Original diameter = 62 mm (2.4409 in.)

      Tolerance H7 : +0, +0.030 mm (+0, +0.00118 in.)

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
R1	62.2 (2.4488)	H7 : + 0.030 (+0.00118) + 0 (+0)
R2	62.4 (2.4566)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	62.6 (2.4645)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	62.8 (2.4724)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	63 (2.4803)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	63.4 (2.4960)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	63.9 (2.5157)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	64.4 (2.5354)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 801
Repair Sizes of Attach Fittings at RIB12

   B. Equipment and Materials

ITEM	DESIGNATION
(1)98A54003029000	Bush Extractor Set
or	

ITEM	DESIGNATION
98A54003029001	Bush Extractor Set
(2)98A54003083000	Reboring Tool
(3)98A54003094000	Chamfering Tool
(4)98A54003063000	Installation Tool
(5)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
(6)	Access Platform
(7)	Circuit Breaker Safety Clips
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance Operations
- 20-23-12, P. Block 1	Specified Torque Values for Unions
- 20-28-11, P. Block 1	Electrical Bonding
- 27-80-00, P. Block 301	Lift Augmentating (Slats and Krueger Flaps)
- 28-20-00, P. Block 401	Distribution
- 28-21-00, P. Block 501	Fuel Pump System
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-21, P. Block 401	Temperature Control Sensor
- 36-21-13, P. Block 401	Precooler Outlet Temperature Sensor (4HX, 5HX)
- 36-11-23, P. Block 401	High Stage Pressure Sensor
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Cowl Doors
- 76-11-31, P. Block 401	Secondary Transmission

C. Procedure

(1)Job set-up

(a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b)Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
21VU	AFS/TCC SYS 1/28VDC	306/CJ1	102/H 8
21VU	AFS/TCC/SYS 1/115VAC	308/CJ1	102/H 9
21VU	AFS/TCC/SENSOR	305/CJ1	102/H10
21VU	AFS/TCC SYS 2/115VAC	308/CJ2	102/H11
21VU	AFS/TCC/SYS 2/28VDC	306/CJ2	102/H12

(c)Remove engine (Ref. 71-00-00, P. Block 401).

(d)Install pylon access platforms.

(e)Jack-up the aircraft (Ref. 07-11-00, P. Block 1).

NOTE : It is not necessary to lift the aircraft wheels clear of ground. Jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.
Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.

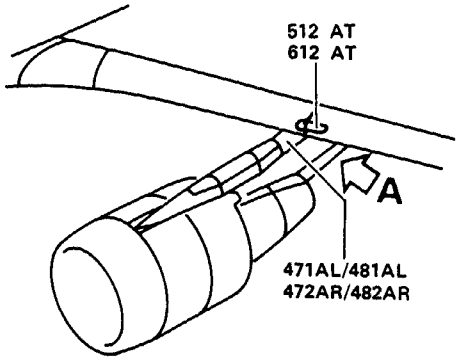
(h)Place flap and slat control lever in fifth notch to extend flaps and slats (Ref. 27-80-00, P. Block 301).

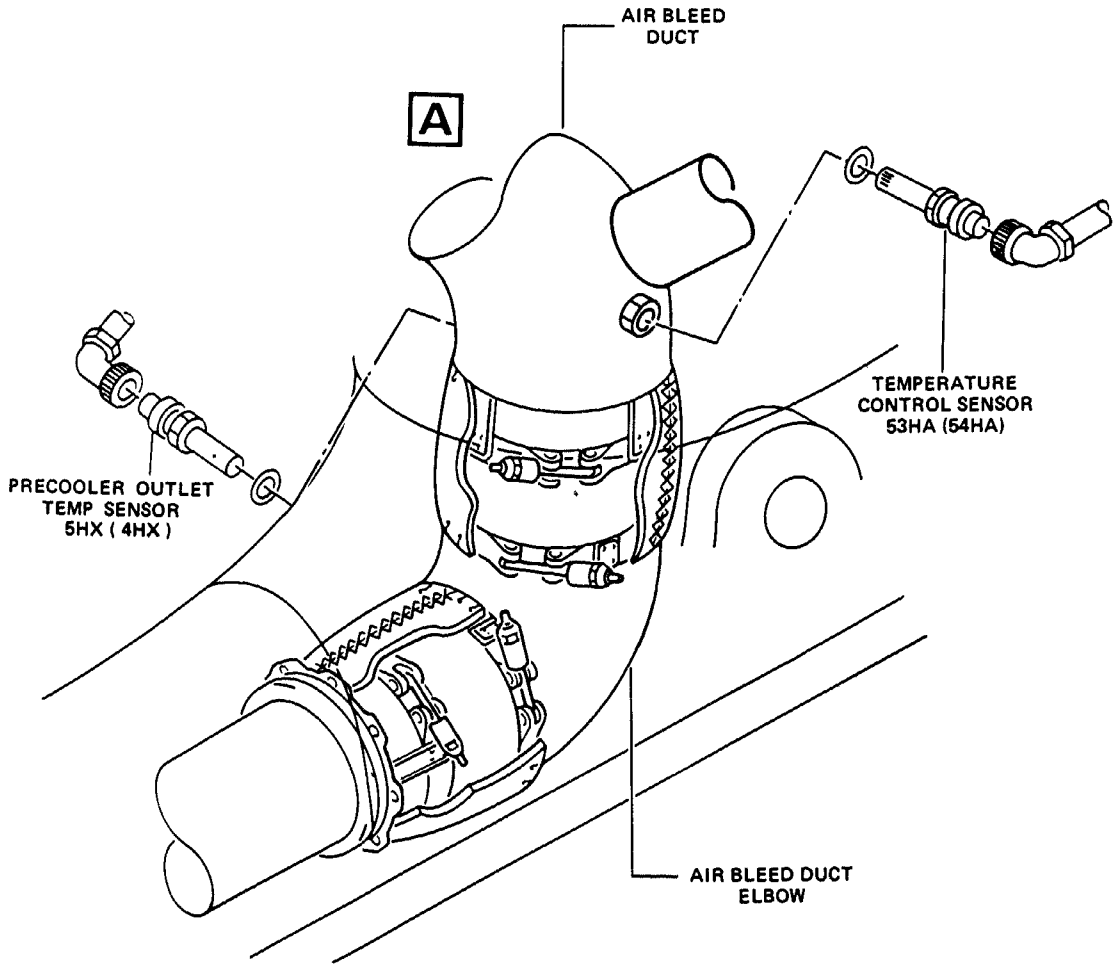
NOTE : Slats must be extented to gain access to panel 512AT (612AT).

(j)Remove the following fillets and skin panels :
On LH engine pylon : 471AL (472AR)
On RH engine pylon : 481AL (482AR)
On LH wing : 512AT. 512KB. 523AB
On RH wing : 612AT. 612KB. 623AB
(k)Remove sensors 53HA (54HA), 5HX (4HX) (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 801)
(l)Remove air bleed duct located between wing RIB6 and RIB8, remove air bleed duct elbow. Cap open end of ducts on aircraft (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 801)
(m)Disconnect electrical connectors (13) from high stage pressure sensor 47HA (48HA) and install blanking caps. (Ref. Fig. 802)
(p)Remove the section of fuel line located between inboard and outboard attach fittings of engine pylon (Ref. 28-20-00, P. Block 401).
(q)Remove electrical cable clamp blocks located near air bleed ducts and stow cables to facilitate access to attach fitting.
(r)Remove air bleed duct shield (Ref. Fig. 803).
(s)Remove throttle control cable from secondary transmission pulley and stow. Remove pulley (Ref. 76-11-31, P. Block 401).
(t)Remove the two throttle control cable guide pulleys and the support angle. Stow cable to clear working area.
(u)Remove fail safe fasteners (bolts and sleeves) from attach fitting (Ref. 54-51-72, P. Block 401).

NOTE : You must remove of the bushes, rebore the fitting (when necessary), install the new bushes and rebore the new bushes on one side at a time. The bushes on the other side stay in position so as to install and center the expandable bush for the boring unit installation. The procedure below is given for one side and is identical for the other side. Use also the new bushes for the installation and centering of the expandable bush for the boring unit installation.

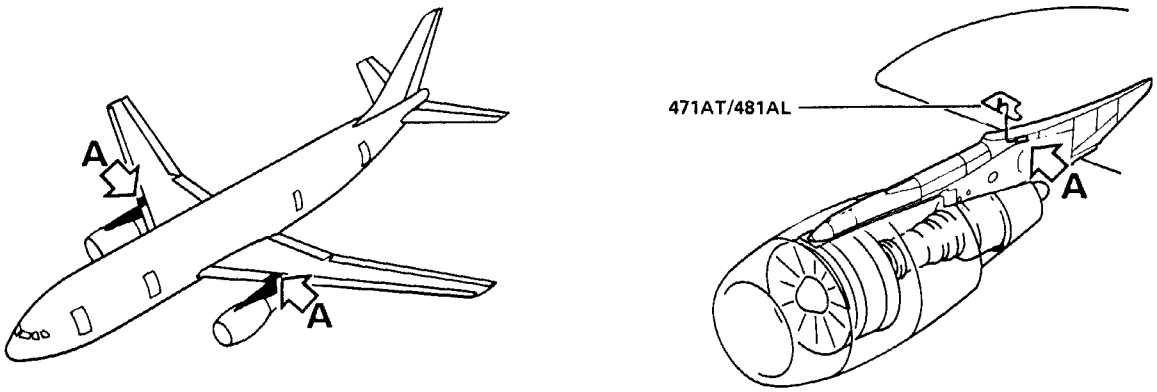
(2)Replacement of bushes.
(a)Removal of bushes at RIB12.
(Ref. Fig. 802)
(Ref. Fig. 804)
(Ref. Fig. 805)
(Ref. Fig. 806)
NOTE : Tools 98A54003029101 and 98A54003029102 are sub-assemblies of tool 98A54003029000.
Tools 98A54003029103 and 98A54003029102 are sub-assemblies of tool 98A54003029001.
1 Remove bush shoulders by machining with tool 98A54003029101 or 98A54003029103.
- adjust tool bit (4) on tool holder (3)
- install tool holder (3) into attach fitting and install attach spider (1)
NOTE : Adjust setting, screw (2) so that tool bit does not knock on attach fitting at installation.
- secure attach spider (1) on fitting with clamps
- install drive unit on tool holder
- remove shoulder by adjusting tool progression with screw (2)

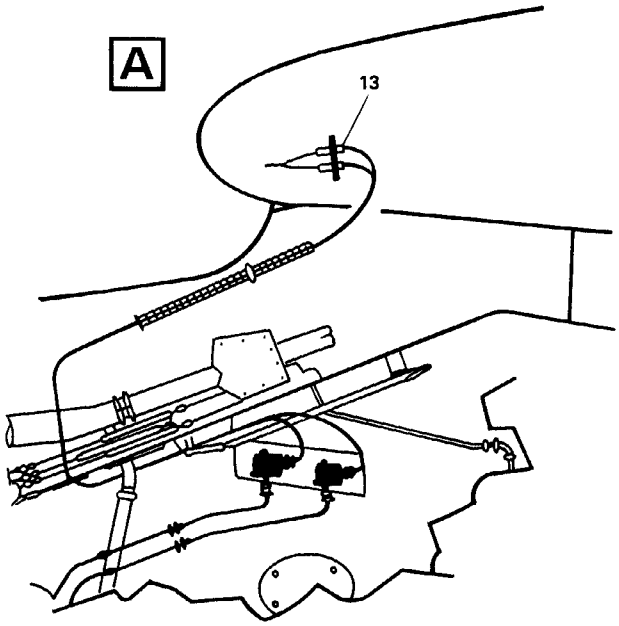




BM5 54 51 72 8 SBMO·25

Removal of Air Bleed Ducts and Sensors
Figure 801





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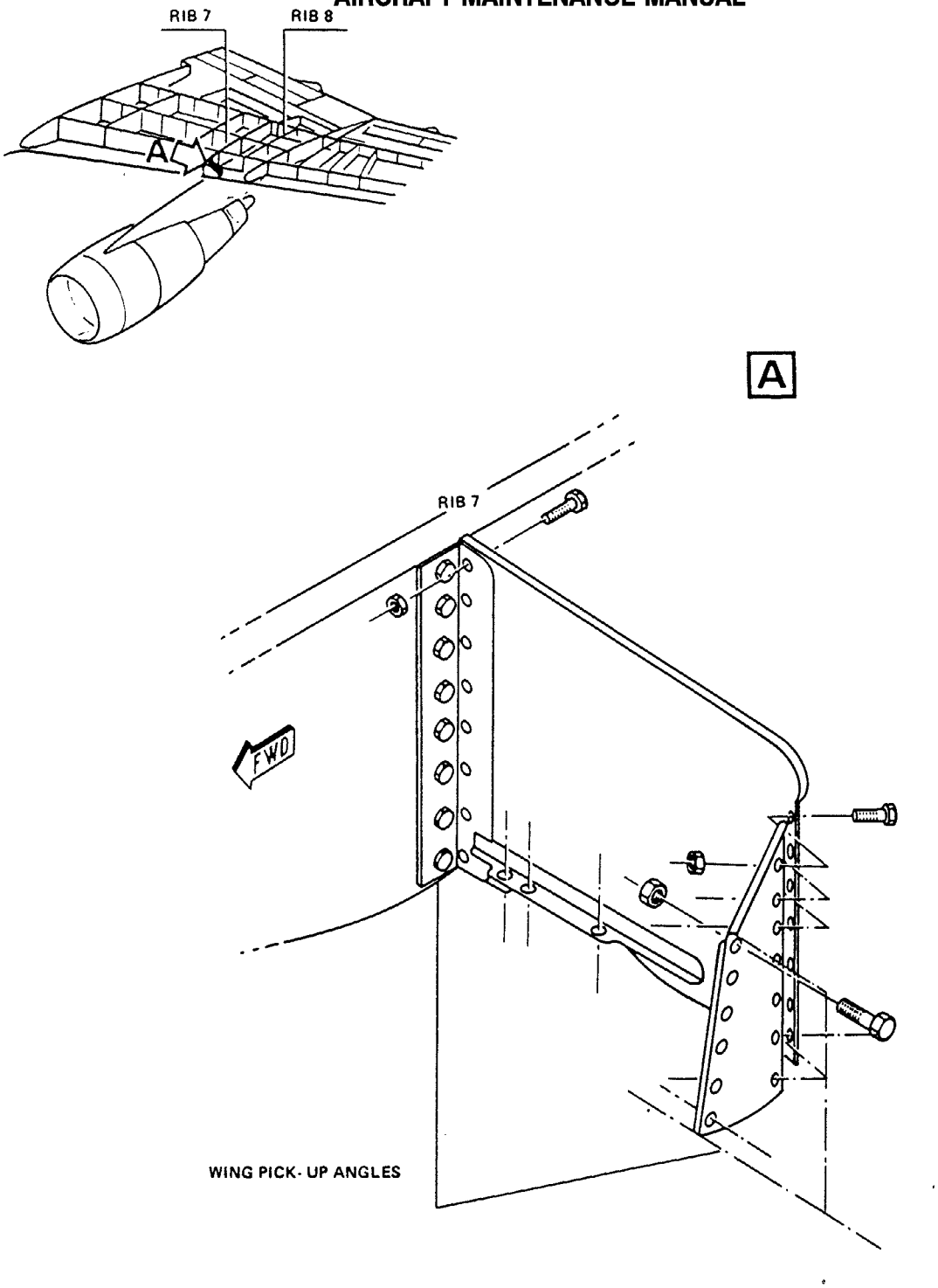
Removal of Pneumatic Lines and Sensors
Figure 802



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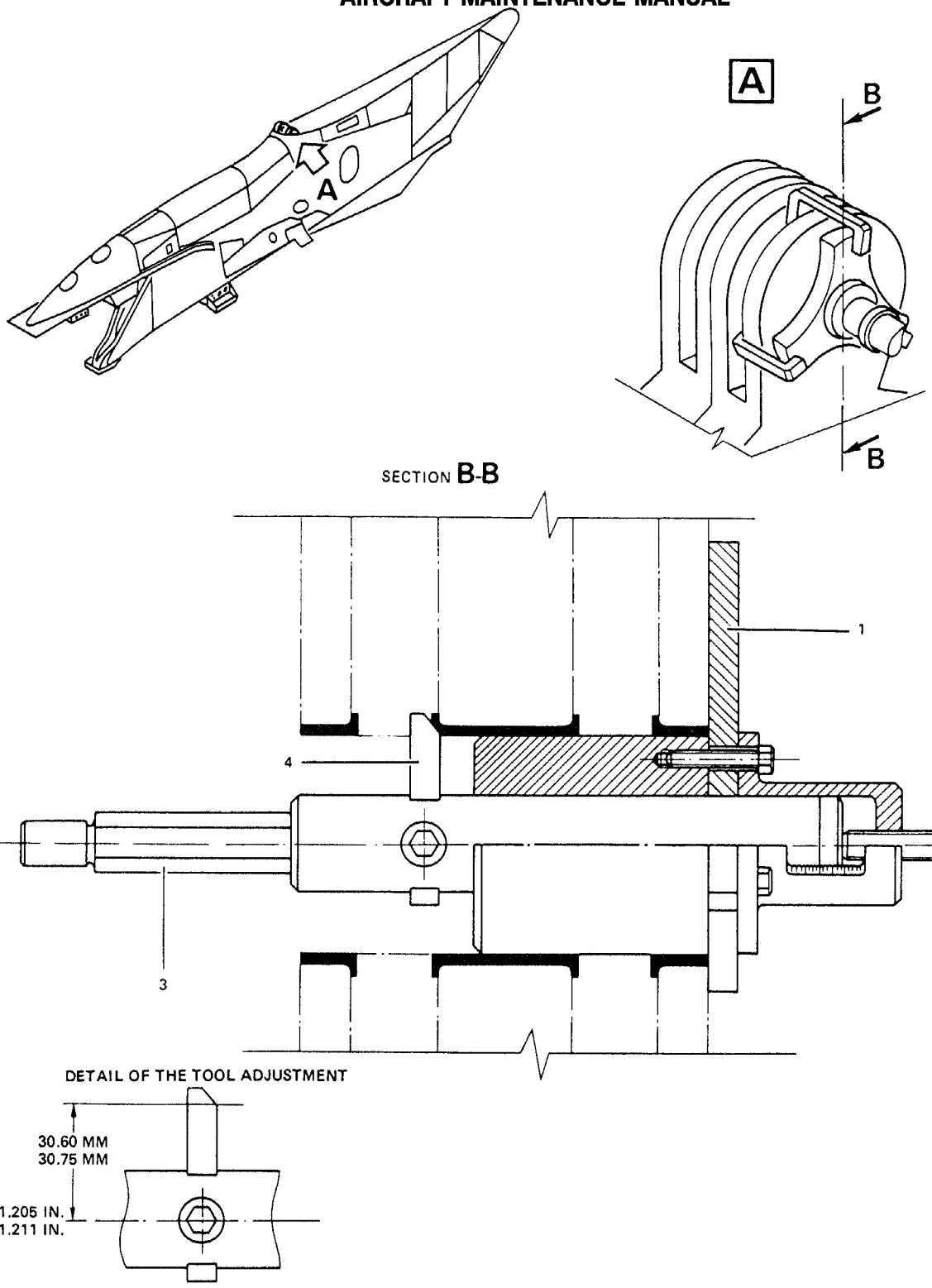
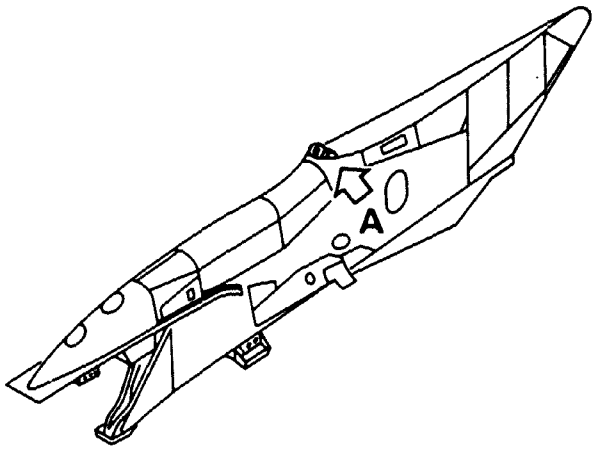
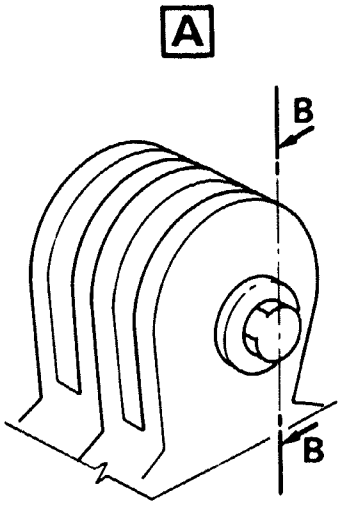
Removal of Air Bleed Duct Shield
Figure 803

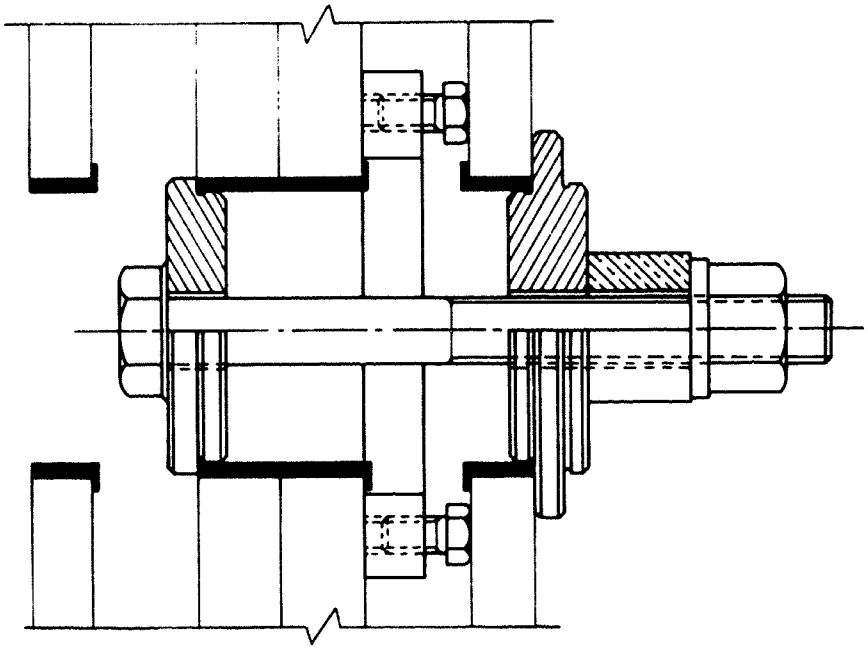


Removal of Bush Shoulders
Figure 804





SECTION B-B



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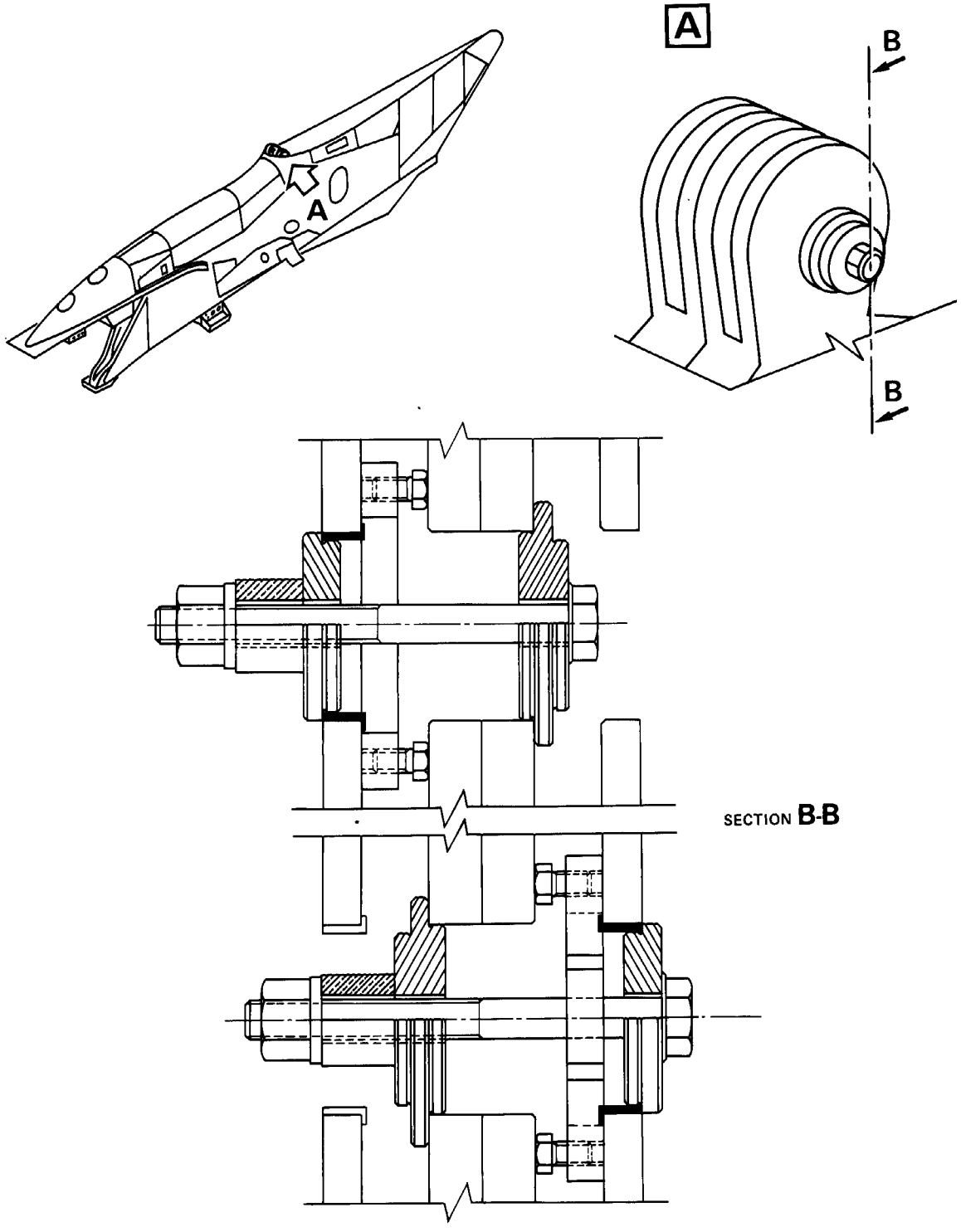
Extraction of Center Bushes
Figure 805



Extraction of Outer Bushes
Figure 806

place cutter in contact with bush shoulder and machine over 2 mm (0.078 in.)
- move tool away and stop drive unit
- remove drive unit
- remove tool holder (3) and attach spider (1).

2 Remove inner bushes using bush extractor set 98A54003029102.

3 Remove outer bushes using bush extractor set 98A54003029102.

4 Inspect bores for wear, perform a dimensional check.
If diameter is out of original limits, para 1.C.(2)(b) has to be accomplished.

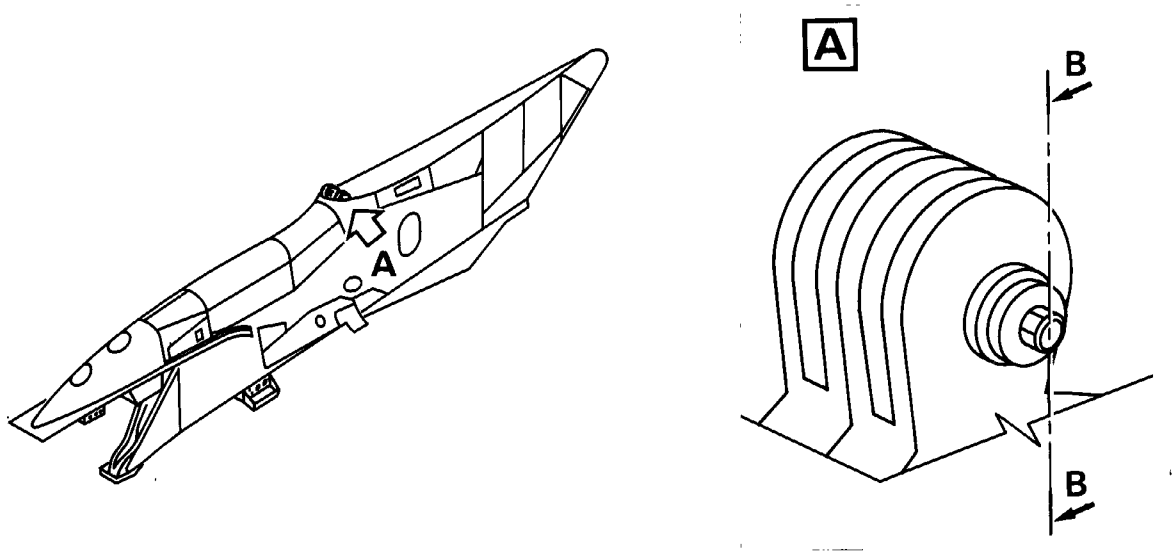
(b)Reboring of RIB12 attach fittings with tool 98A54003083000.

1 Installation of boring bar bearings (4) and clamps on attach fitting to be rebored.
(Ref. Fig. 807)
(Ref. Fig. 808)
- install centering/expandible bush assembly into hole of attach fitting
- tighten the centering adapter (3) to bring the expandible bush (2) into contact with the fitting hole
- check that centering adapter (3) is correctly installed
- install bearings (4) on ring of centering adapter (3) and on ring (5)
- install clamps in three points on bearings (4) on inner and outer lugs of RIB12 attach fitting
- untighten centering adapter and check that rings (3 and 5) turn freely in bearings (4). If not, align correctly centering adapter by means of the three tightening screws (1)
- clamp securely
- remove centering adapter (3).

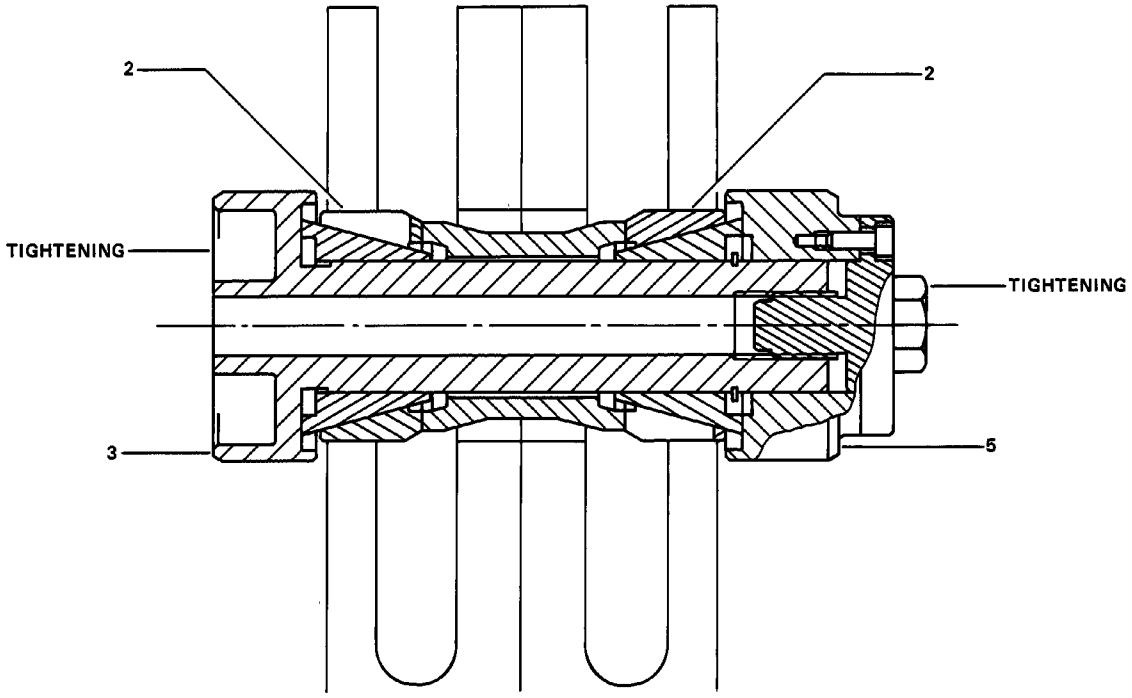
2 Installation of the expandible bush for attachment of reboring unit.
(Ref. Fig. 809)
- on pylon attach fitting opposite to attach fitting to be re-bored, leave bushes in place and install expandible bush for attachment of the reboring unit
- lock with nut.

3 Zeroing of boring bar calibration tool.
(Ref. Fig. 810)
NOTE : Prior to calibration, check that the master bar and Vee fitting supports are clean.
- install master bar on surface plate
- zero the calibration tool on the required diameter repair dimension
- after zeroing, remove master bar.

4 Calibration of the boring bar
- install tools with throwaway inserts E5 SU46 for titanium machining
- install boring bar on surface plate
- calibrate the three tools one after the other, using the micrometer screw located aft. The tools must be calibrated according to the minimum repair dimension
- turn slightly the boring bar so as to displace and position the end of the tool against the feeler plunger to obtain the most accurate calibration



SECTION B-B



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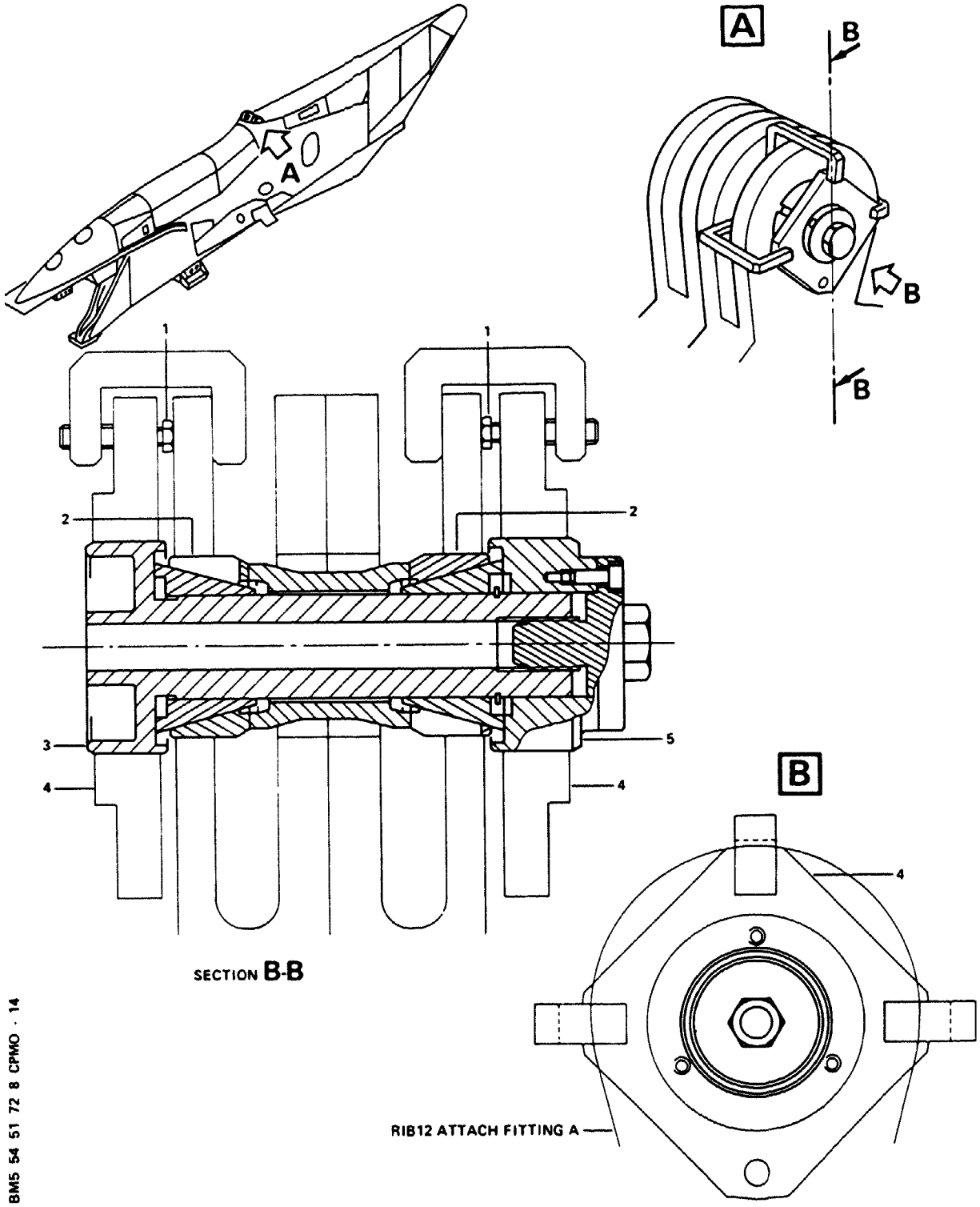
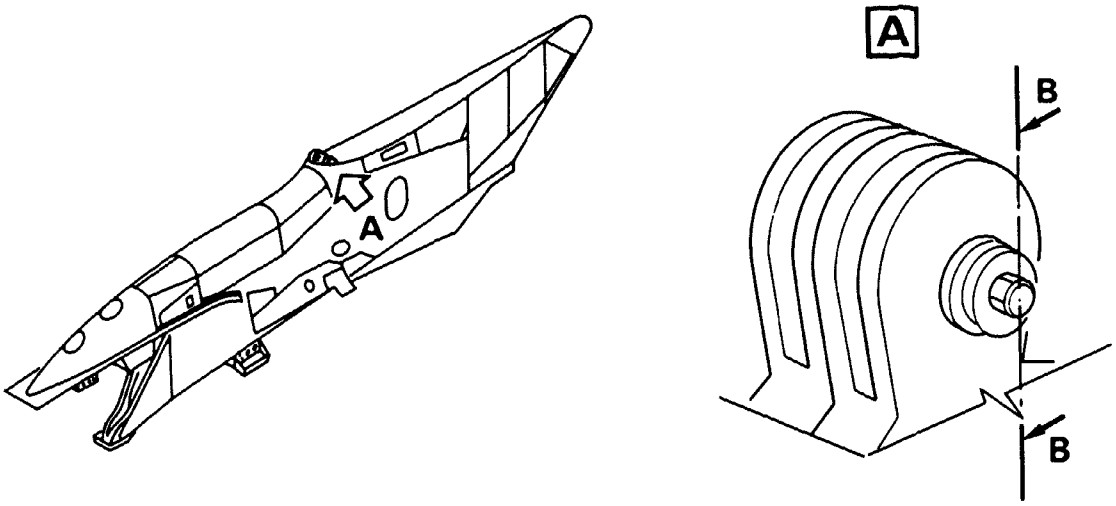
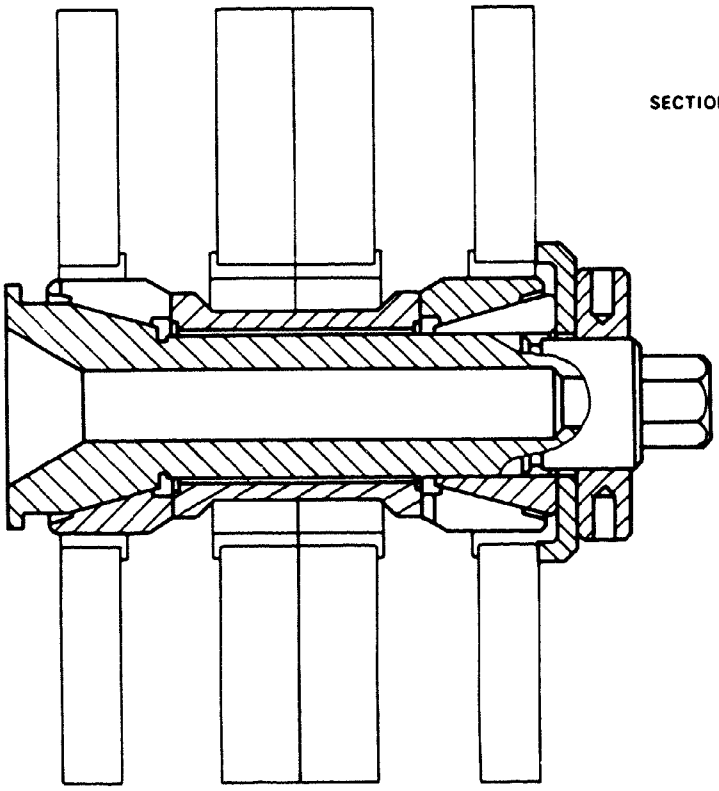
Installation of Expandible Bush Assembly for Centering of Bearings
Figure 807



Installation of Boring Bar Bearings
Figure 808



SECTION B-B



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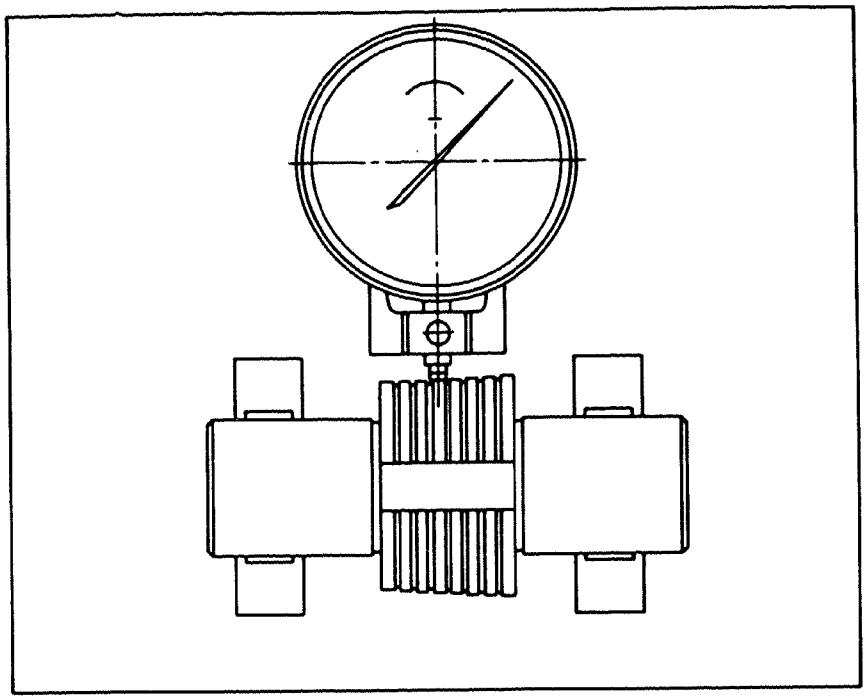
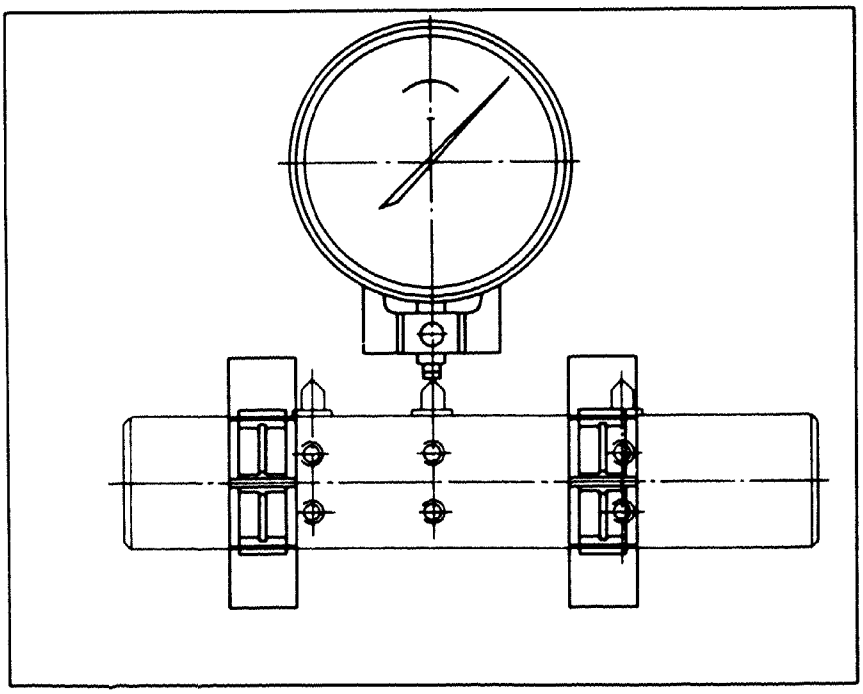
Installation of Expandible Bush for Attachment of Reboring Unit
Figure 809



CALIBRATION



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Zeroing of the Calibration Tool (for Reboring the Fitting)
Figure 810

- securely tighten tool body with micrometer screw. Check repair dimension after tightening.
  NOTE : Calibrate tools with extreme care.
  The quality of the reboring depends on the accuracy of this adjustment.

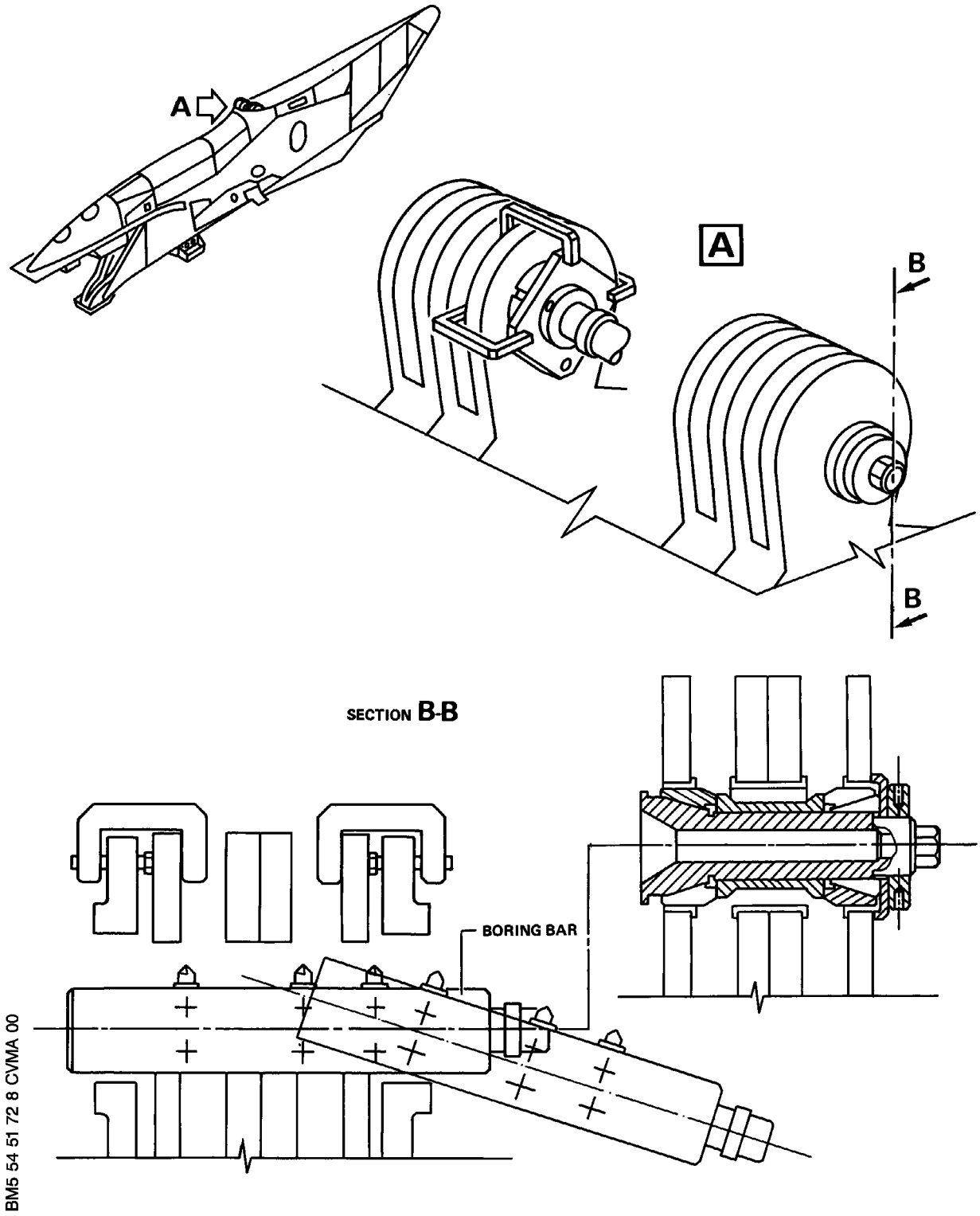
5 Installation of the boring bar.
(Ref. Fig. 811)
- insert boring bar in hole of pylon attach fittings ; this must be done carefully not to damage tool ends
- position bar on hole bottom, tools up
- install rings (1)
- lock rings on bearings (2)
- check that boring bar turns freely.

6 Installation of boring unit.
(Ref. Fig. 812)
- position boring unit on centering adapter and connect air pressure source
- place spindle screw into the nose
- using a 5mm (0.20 in.) dia. rod, align holes in spindle screw, nose and safety nut
- install connecting pin
- tighten safety nut.

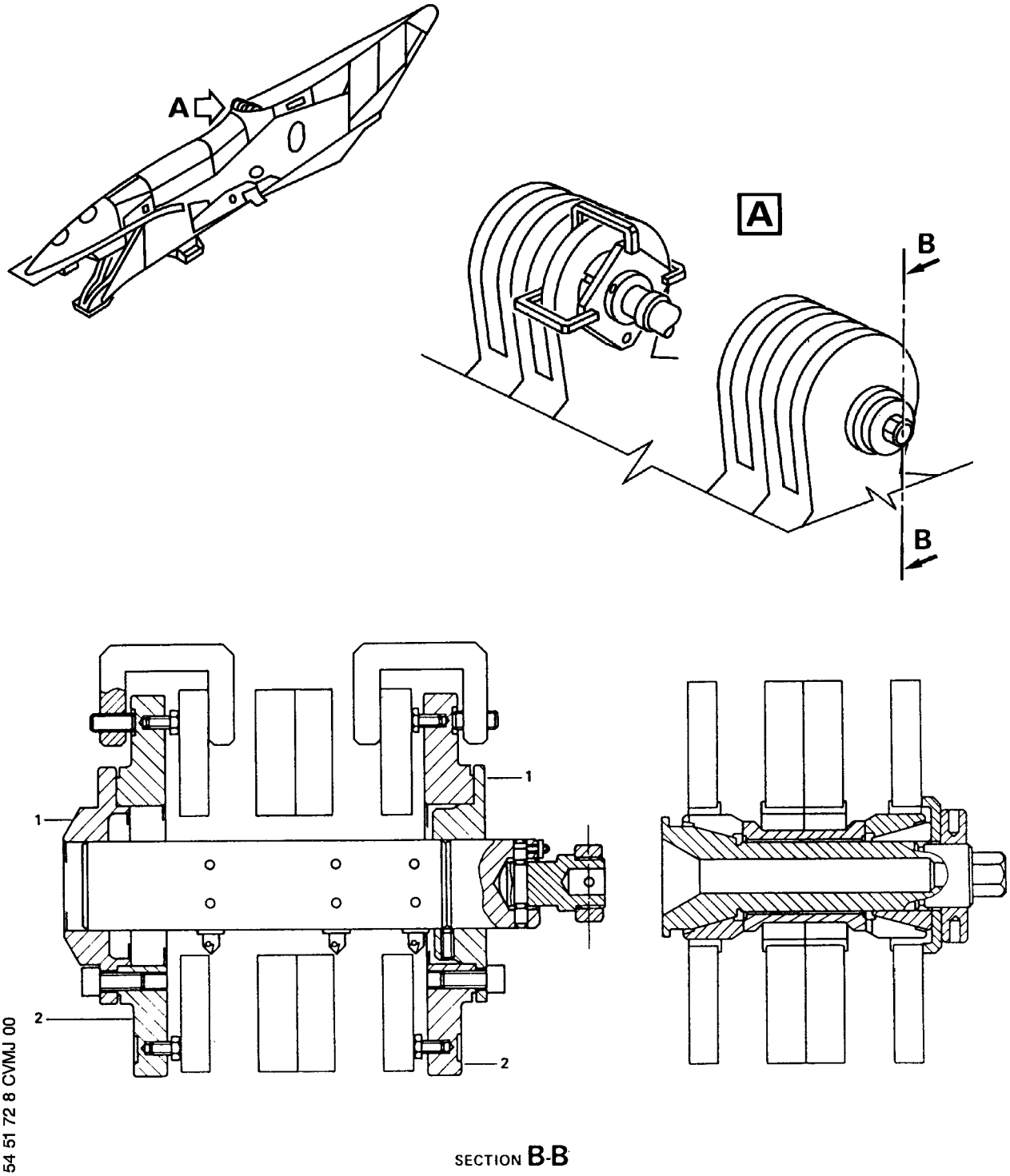
7 Reboring of pylon attach fittings at RIB12.
(Ref. Fig. 813)
- start-up boring unit with the air valve in open position
- monitor the operation and lubricate. When the end of the boring bar is at 27mm (1.06 in.) of the outer ring face, stop the operation.

8 Removal after boring.
- the boring bar is at the end of travel position
- remove pin connecting the bar to the spindle screw
- start-up the unit with the air valve in rapid-retraction position
  CAUTION : ON THE RETURN MOTION, BE CAREFUL NOT TO SEND BACK THE SPINDLE SCREW TOO FAR SO AS TO AVOID JAMMING OF THE BORING UNIT GEARS.
  THE RETRACTION MUST BE STOPPED WHEN THE CONNECTION HOLE IS HIDDEN BY THE BEARING INSTALLED ON THE NOSE OF THE BORING UNIT.
- remove the unit
- remove inner and outer centering rings
- remove boring bar
- the centering bearings remain in place
- check boring.

9 Chamfering of bores in attach fitting with tool 98A54003094000.
(Ref. Fig. 814)
(Ref. Fig. 815)
NOTE : The procedure is identical for the four chamfers. Only the chamfering tool differs. Sub-assembly tool 98A54003094113 is used for outer attach fitting machining and sub-assembly tool 98A54003094114 for inner attach fitting.
- install expandible bush (2). Slightly tighten nut (3) so that the expandible bush (2) can still slide inside the hole



Installation of Boring Bar (Sheet 1/2)
Figure 811



Installation of Boring Bar (Sheet 2/2)
Figure 811

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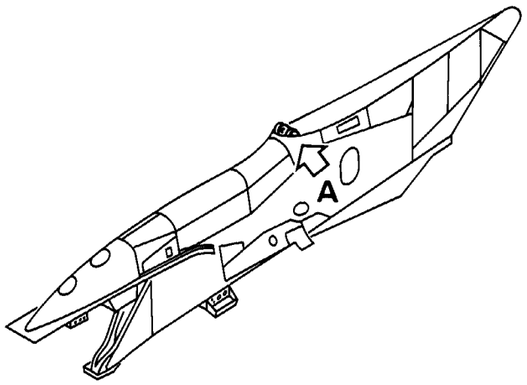

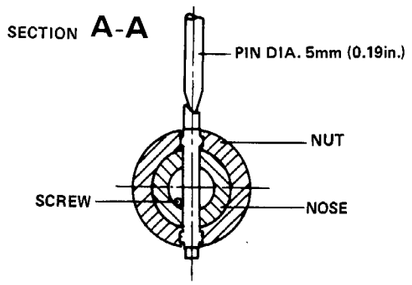

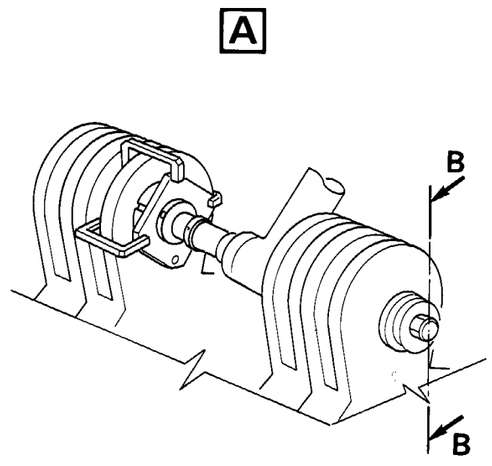

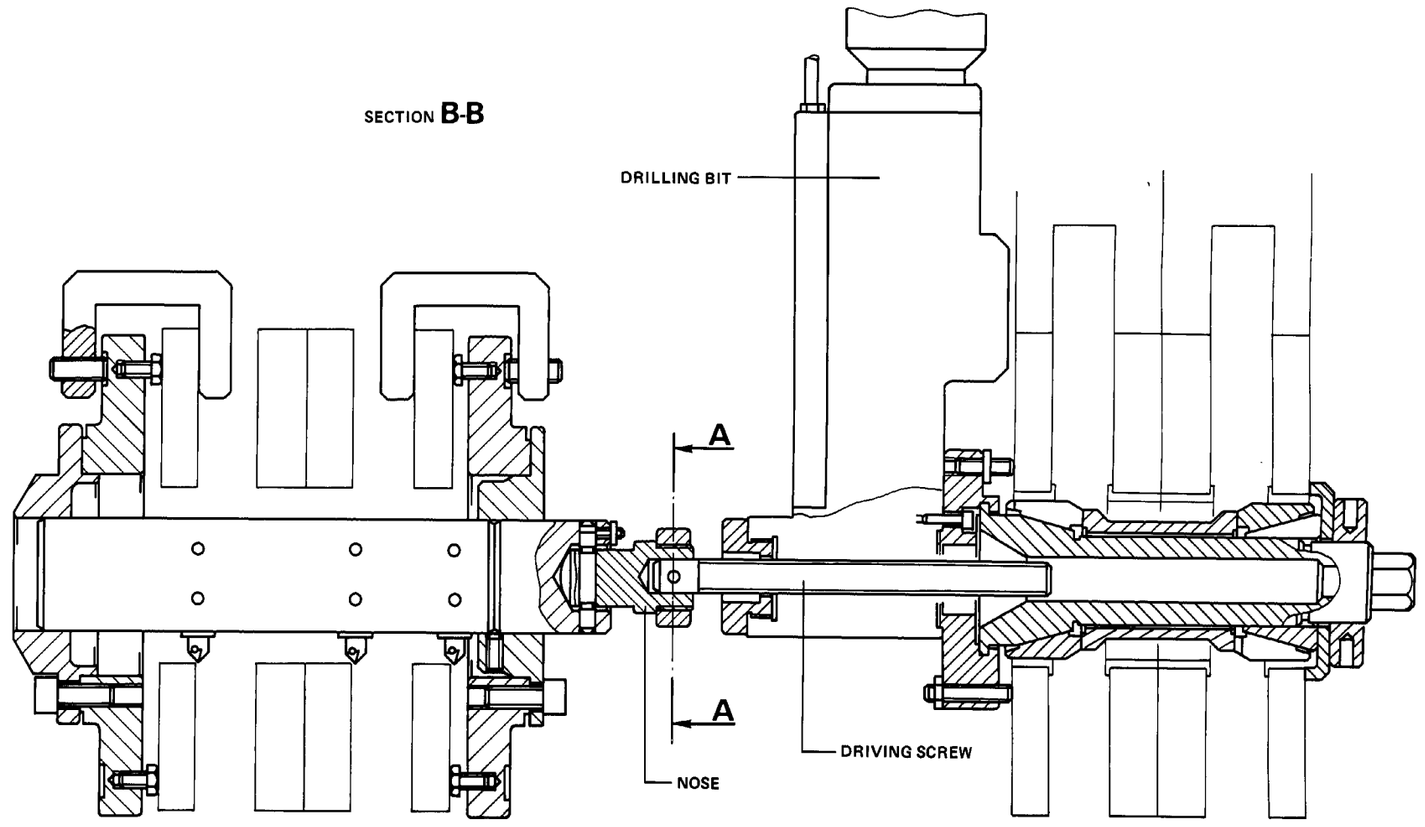

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Installation of Boring Unit (for Reboring the Fitting)
Figure 812

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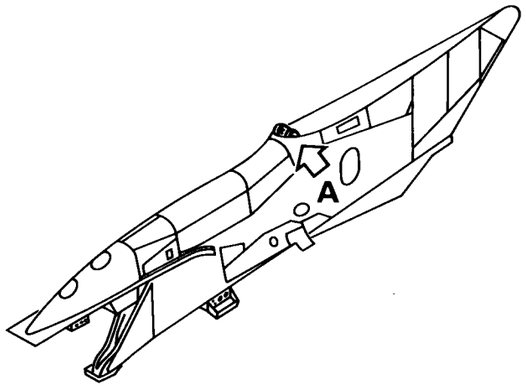
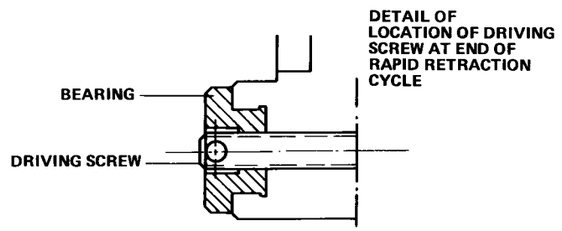
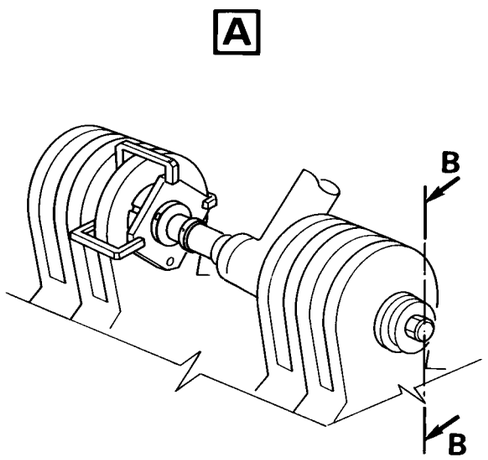
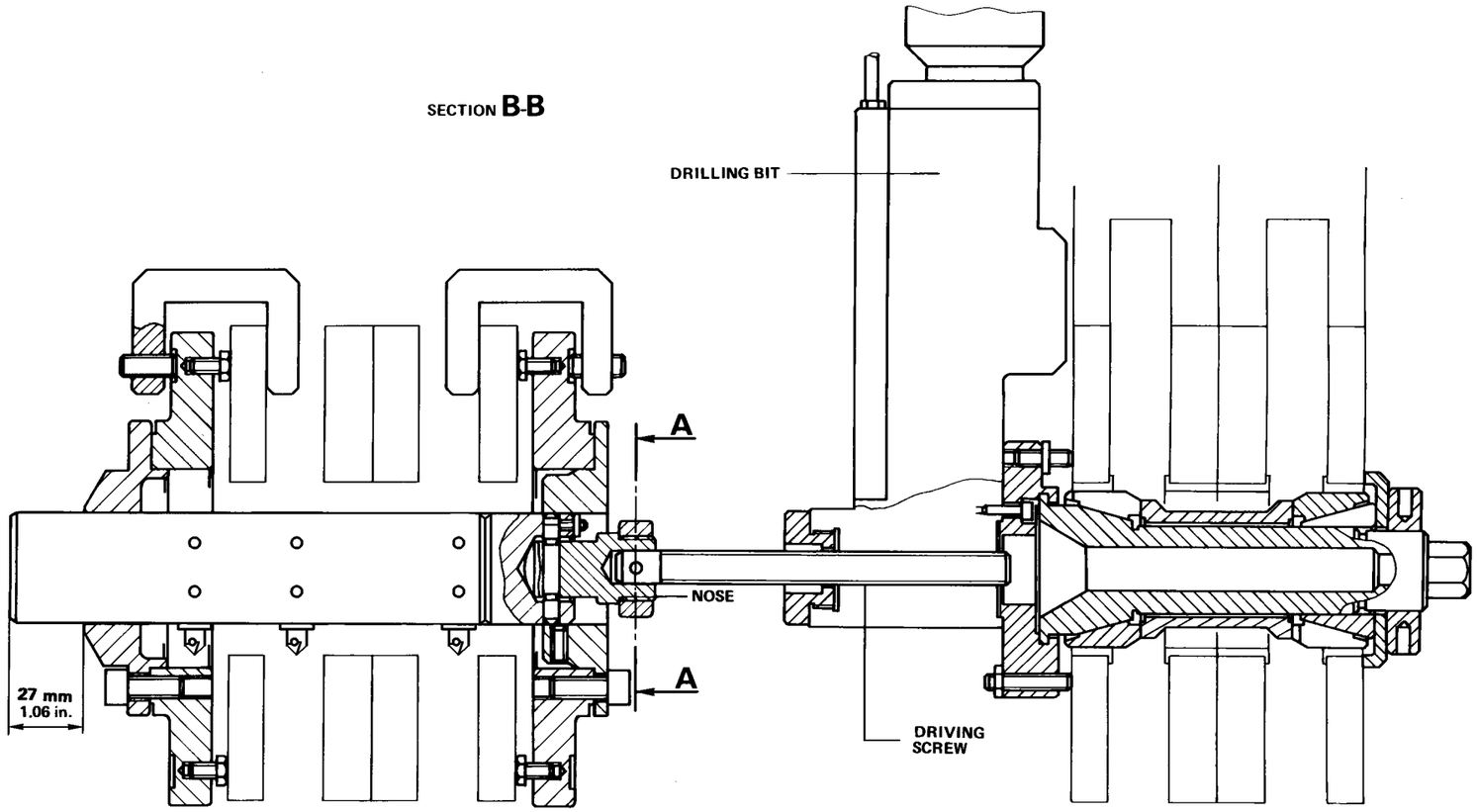




SECTION A-A

SECTION B-B





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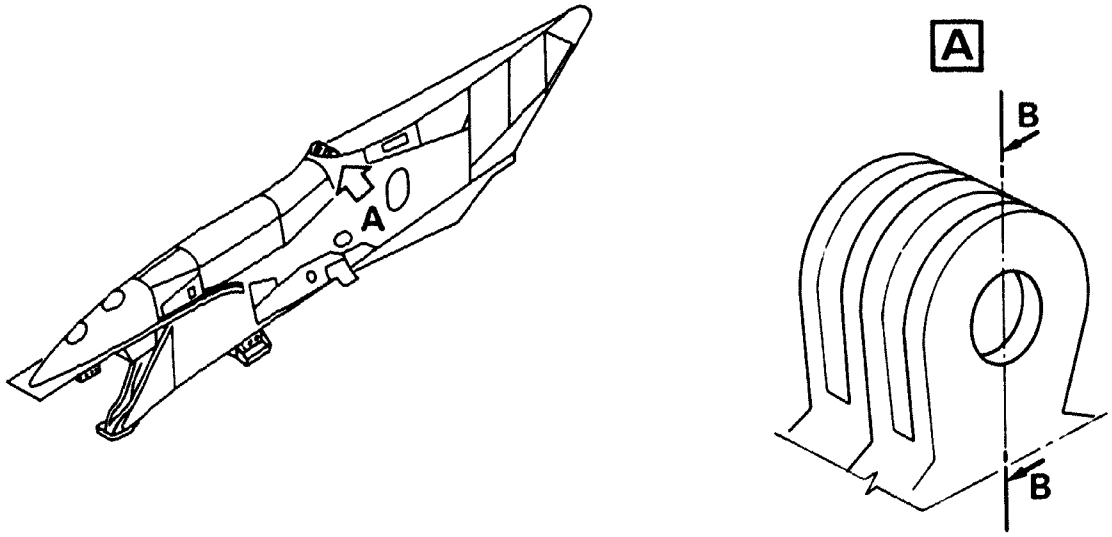
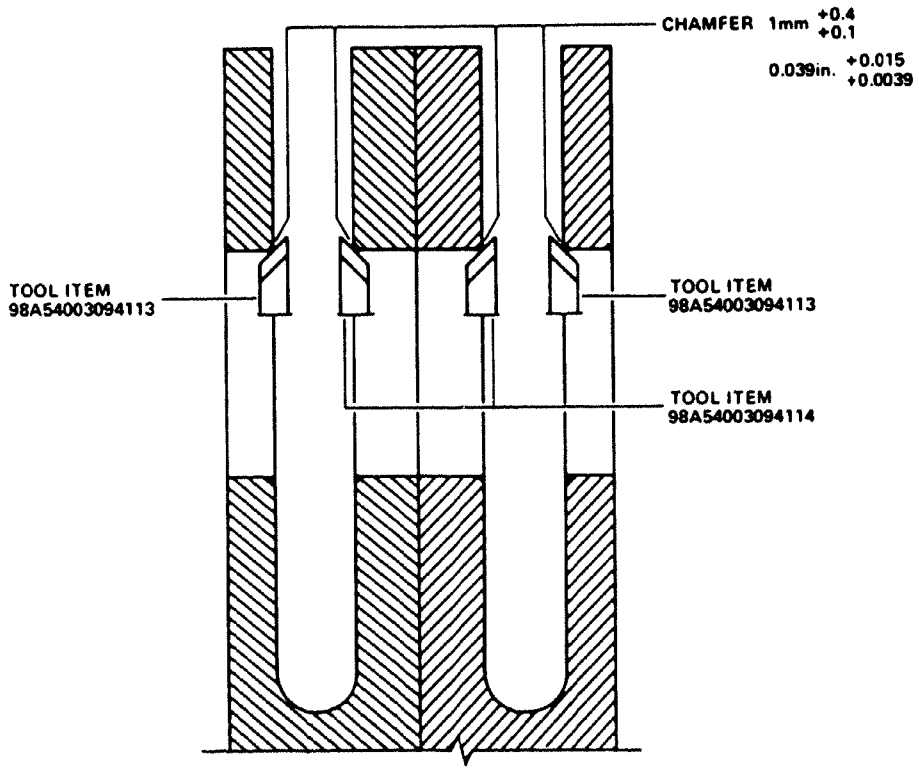
Position of the Tools at the End of Travel Position
(for Reboring the Fitting)
Figure 813



SECTION B-B



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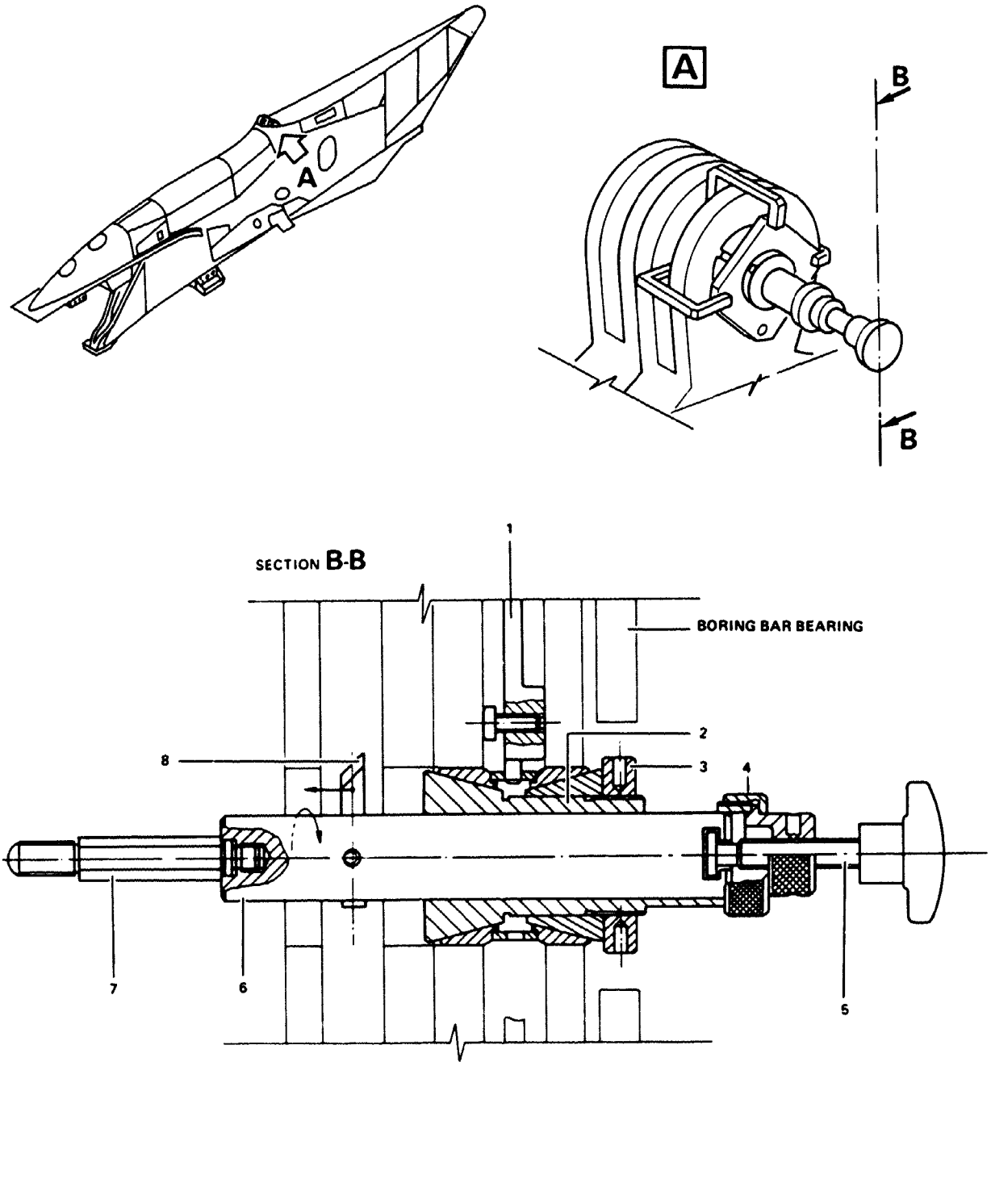
Chamfering of Attach Fitting
Figure 814



Chamfering Tool
Figure 815

- remove expandible bush (2) from attach fitting
- out of the attach fitting, adjust cutter (8) in working position. A correct adjustment is obtained when the body of cutter (8) is flush with the chamfering bar (6)
- lock cutter (8)
- insert chamfering bar (6) on one side of the attach fitting to be chamfered and expandible bush (2) on the opposite side
- install control screw (5), screw threaded ring (4) on expandible bush (2) body
- use control screw (5) to align reference mark on bar (6) with a graduation on expandible bush (2)
- displace tool assembly inside attach fitting so that cutting side of cutter is in contact with the edge of attach fitting to be chamfered

  NOTE : Actions described in 7 and 8 are recommended for an easier evaluation of the value of the chamfer when chamfering.
- turn control screw (5) to move back cutter from attach fitting
- lock expandible bush (2) by tightening nut (3)
- place cutter in contact with edge to be chamfered, turn the cutter by hand and check that it contacts all the hole periphery
- install stops (1)
- install drive unit on spindle (7)
- start-up unit and machine chamfer while controlling cutter progression with control screw (5)
- move back cutter and stop drive unit
- remove drive unit
- untighten cutter on bar (6) and position it in such a way that the bar can be removed
- untighten threaded ring (4) and remove control screw (5)
- remove bar (6)
- remove stops (1)
- remove expandible bush (2)
- clean carefully the machining area with Material No. 11-003 and deburr if necessary.

(c)Installation of attach fitting bushes.
(Ref. Fig. 816)

CAUTION : INSTALL INNER BUSHES BEFORE OUTER ONES.

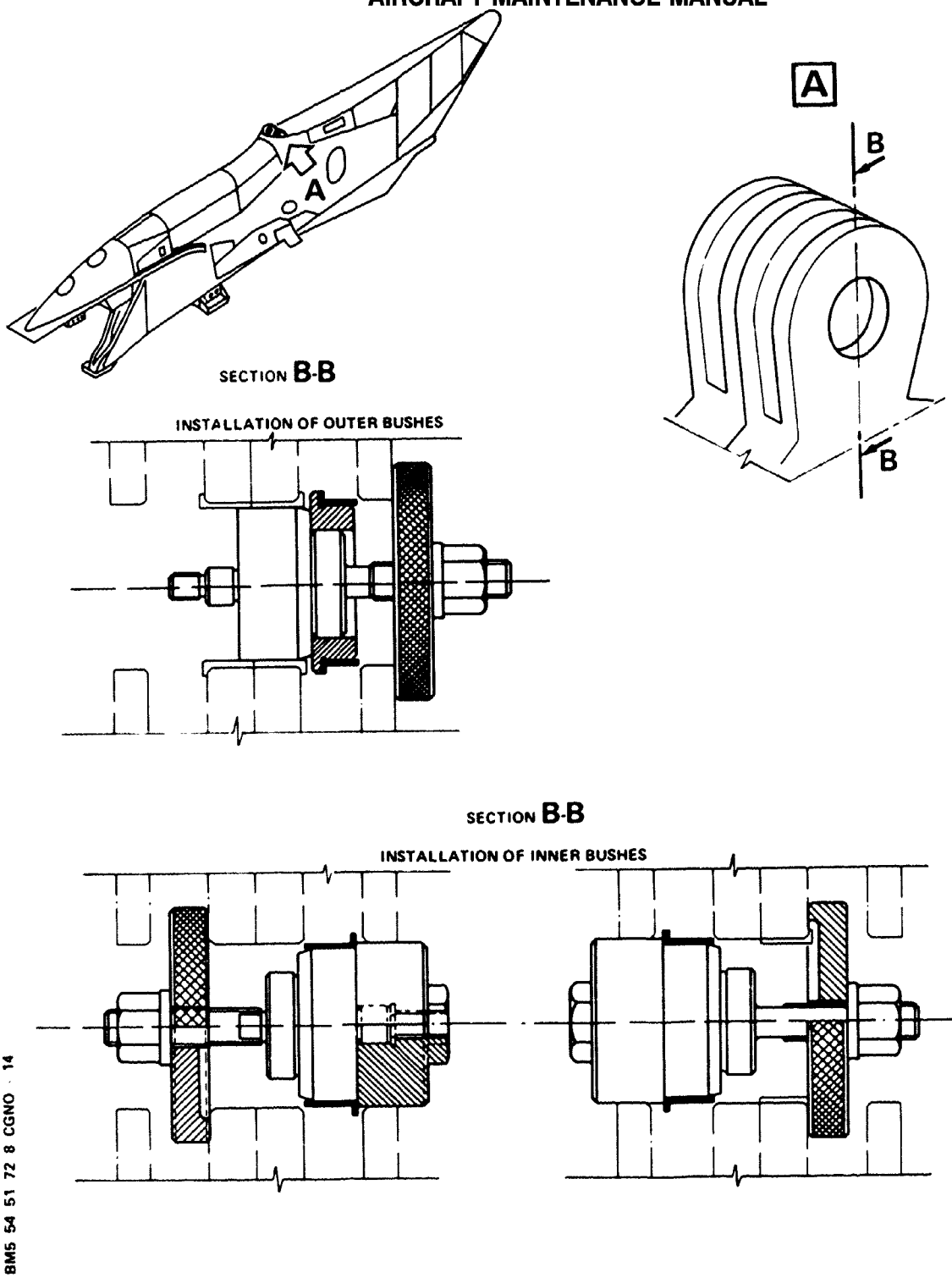
1 Install repair size bushes with liquid nitrogen and using tool 98A54003063000.

(d)Reboring of bushes with tool 98A54003083000.

NOTE : As bushes are shouldered, they cannot be rebored simultaneously. Reboring will be performed in two steps :
- simultaneous reboring of inner and outer bushes
- reboring of center bushes.

1 If the boring bar bearing (4) and clamps are not installed on the attach fitting, install them. Refer to paragraph 1.C.(2)(b). (Ref. Fig. 807, 808)

2 Zero reboring bar calibration tool with master bar 98A54003083204 (nominal diameter : 56mm (2.20472 in.). Tolerance H7 : +0, +0.030mm (+0, +0.00118in.))
Refer to paragraph 1.C.(2)(b)3.



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Bush Installation Tool
Figure 816

NOTE : Item 98A54003083204 is a sub-assembly of 98A54003083000.

3 Install on reboring bar the two outer cutters fitted with inserts for beryllium bronze machining. Adjust according to paragraph 1.C.(2)(b)4.
(Ref. Fig. 817)

NOTE : Cutters must be adjusted at between 0.01 and 0.015mm (0.00039 and 0.00059 in.) above the minimum reboring diameter.

4 Install boring bar referring to paragraph 1.C.(2)(b)5.

5 Install boring unit referring to paragraph 1.C.(2)(b)6.

6 Rebore outer bushes referring to paragraph 1.C.(2)(b)7. Boring is completed when boring bar is 10 mm (0.39 in.) out of the center bush.
(Ref. Fig. 818)

7 Remove boring bar referring to paragraph 1.C.(2)(b)8.

8 Bring in outer cutters and install center cutter for machining of attach fitting center bushes

9 Adjust center tool, referring to 1.C.(2)(b)4.

NOTE : Cutter must be adjusted at between 0.01 and 0.015 mm (0.00039 and 0.00059 in.) above the minimum reboring diameter.

10 Install boring bar and boring unit referring to paragraphs 3.B.(2)(d) and 1.C.(2)(b)6.

11 Rebore center bushes. Boring is completed when boring bar is 28 mm (1.1 in.) out of the center bush.
(Ref. Fig. 819)

12 Remove boring tool assembly :
- remove boring unit
- remove centering rings
- remove boring bar
- remove centering bearings
- remove expandible bush for attachment of boring unit
- check cutters
- clean components
- stow away tools in storage container.

13 Check bore.
- clean thoroughly with Material No. 11-003
- carefully deburr edges of bushes (0.1 to 0.3 mm max. (0.0039 to 0.0118 in. max.)) using tool 98A54003029101 or 98A54003029103 which serves also for removal of shoulder on bush.

(3)Close-up

(a)Install fail-safe fasteners into attach fittings of RIB12 (Ref. 54-51-72, P. Block 401).

(b)Install the two throttle control cable guide pulleys and the support angle.

(c)Install secondary transmission pulley and throttle control cable (Ref. 76-11-31, P. Block 401).

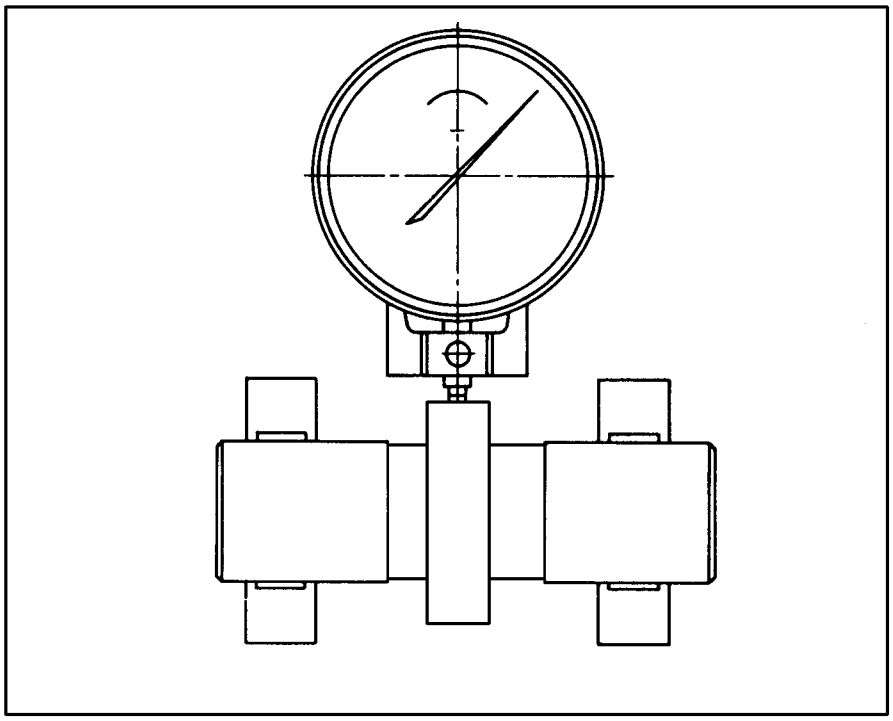
(d)Install air bleed duct shield (Ref. Fig. 803).

(e)Install clamps and electrical cable.

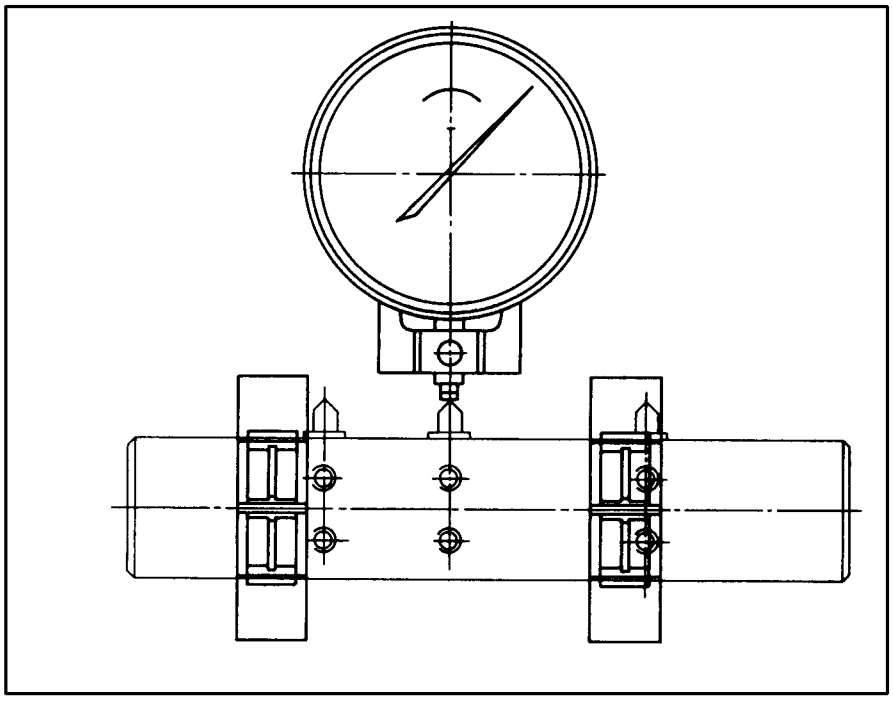
(f)Install the section of fuel line located between inboard and outboard attach fittings of engine pylon (Ref. 28-20-00, P. Block 401).

(g)Install air bleed duct elbow and air bleed duct located between wing RIB6 and RIB8 (Ref. 36-11-00, P. Block 401) (Ref. Fig. 801).

(h)Install sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21 and 36-21-13,



CALIBRATION



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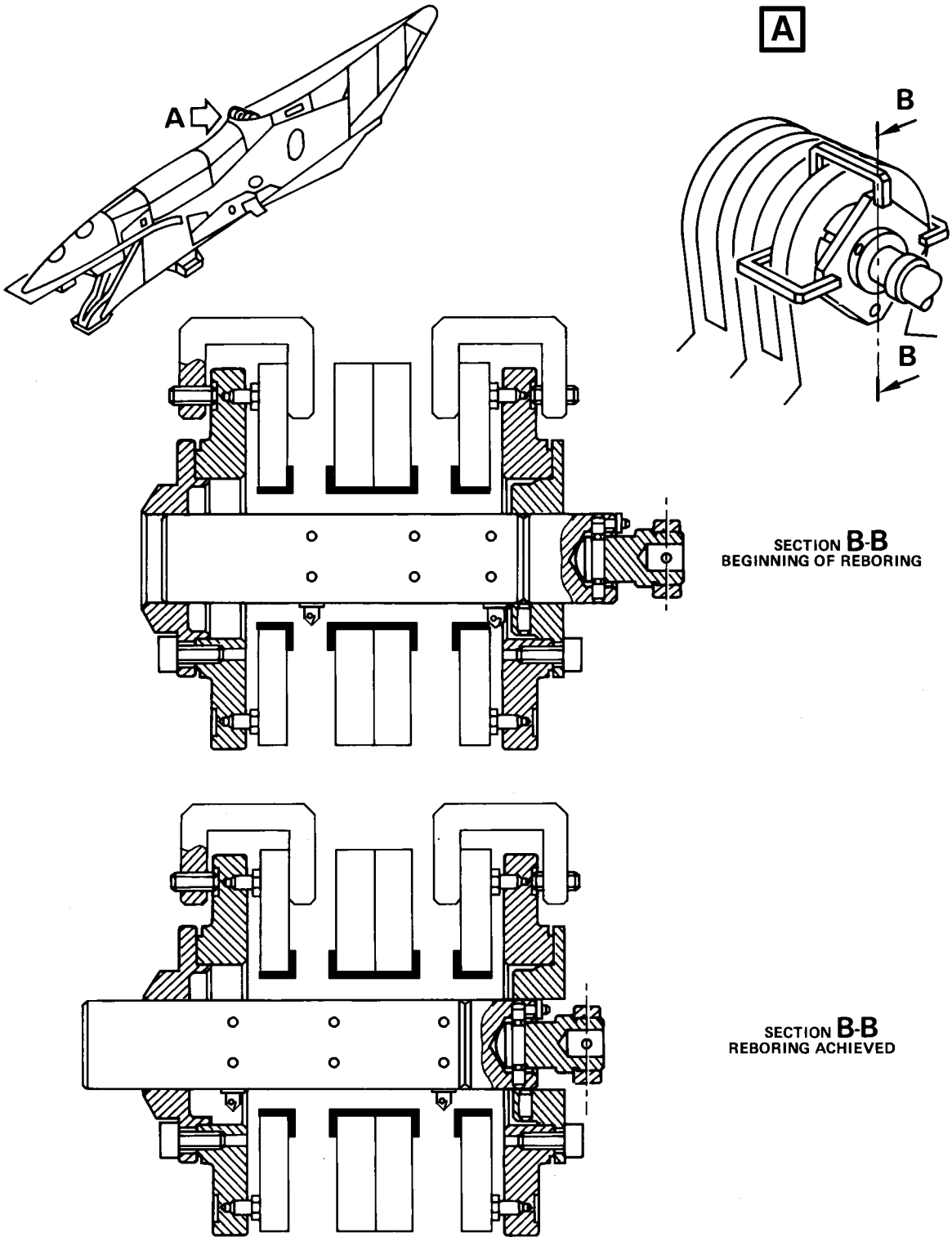
Zeroing of the Calibration Tool (for Reboring the Bushes)
Figure 817



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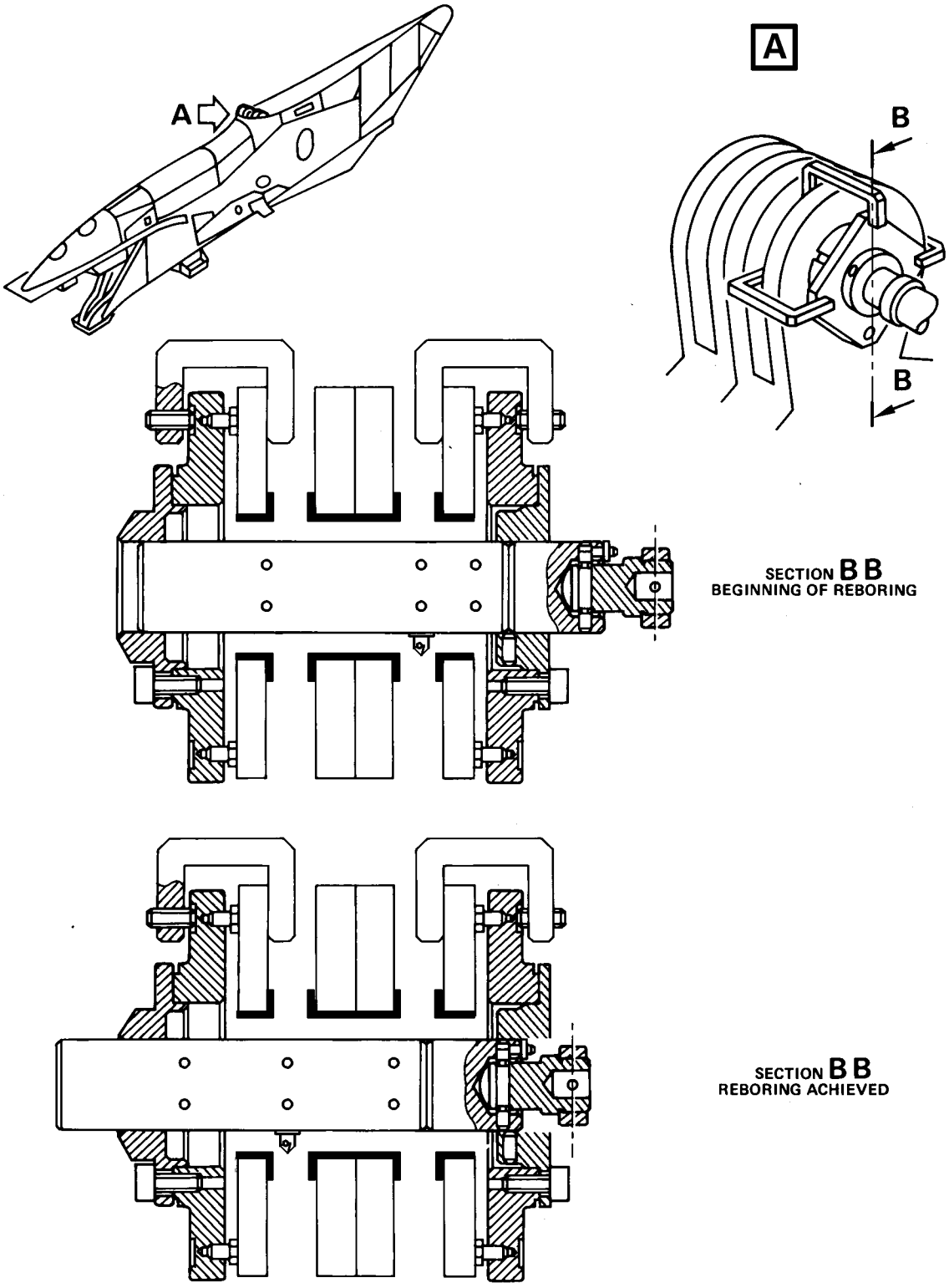
Reboring of Outer Bushes.
Figure 818



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Reboring of Center Bushes
Figure 819

P. Block 401). (Ref. Fig. 801)
(i)Remove plug and connect electrical connectors (13) from high stage pressure sensors 47HA (48HA). (Ref. Fig. 802)
(j)Make certain that working area is clean and clear of tools and miscellaneous items of equipment. Install panels removed in paragraph 1.C.(1).
(k)Retract flap and slats (Ref. 27-80-00, P. Block 301).
(l)Install engine (Ref. 71-00-00, P. Block 401).
(m)Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).
(n)Close engine cowl doors (Ref. 71-13-00, P. Block 301).
(o)Remove access platform.

2. Replacement of the Bushes of the Shackles at RIB12
NOTE : This procedure is identical for left and right pylons.

A. Equipment and Materials

ITEM	DESIGNATION
(1)Material No. 08-029	Bonding and Adhesive Compounds (Ref. 20-31-00)
(2)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedure - 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)

B. Job Set-Up
(1)Remove the shackles at RIB12 (Ref. 54-51-72, P. Block 401).

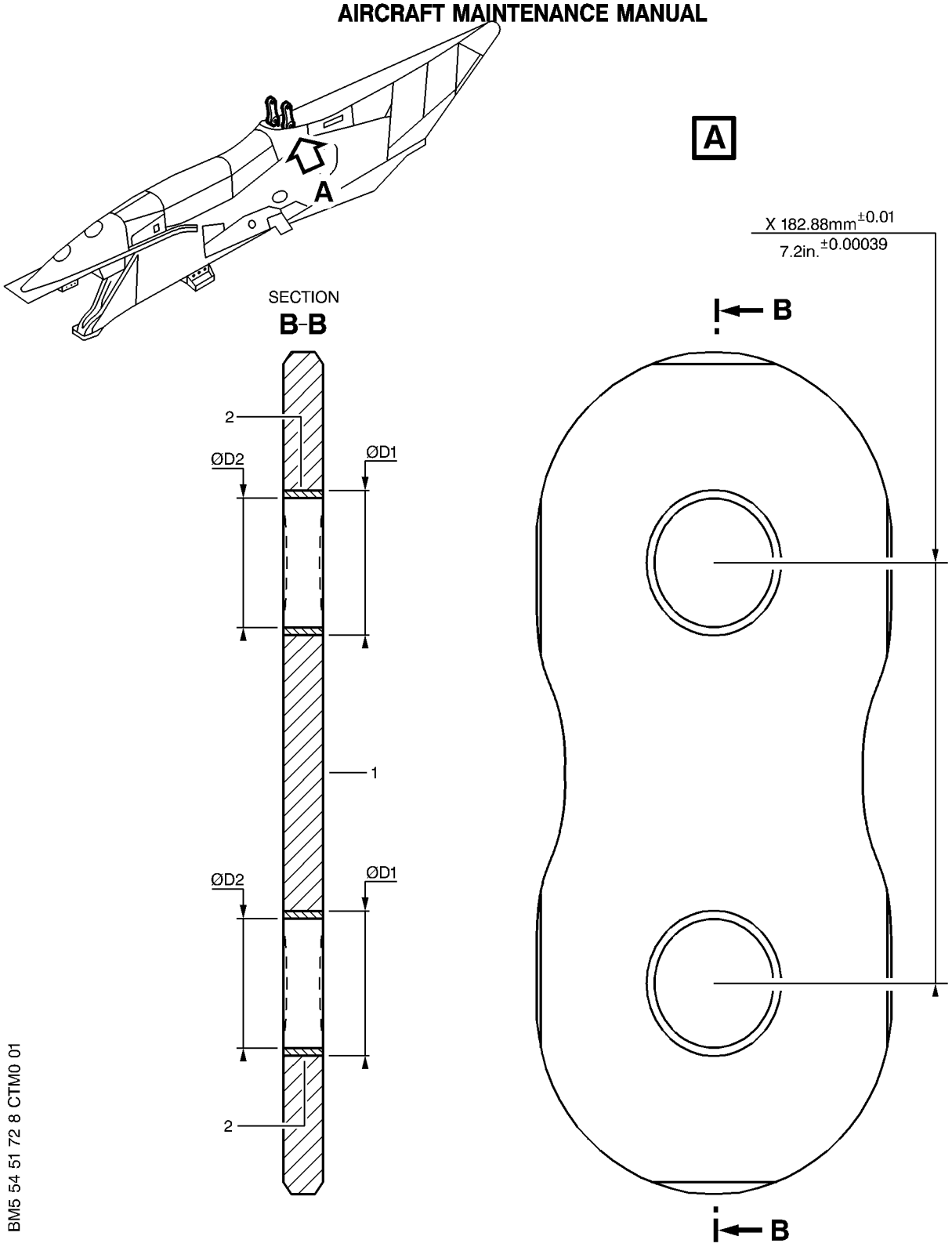
C. Procedure
(Ref. Fig. 820)
(1)Remove the bushes (2) from the shackle (1).
(2)Clean the shackle (1) with Material No. 11-003.
(3)Visually inspect the shackle bores and make sure that there is no damage.
(4)Measure the diameters D1 of the shackles bore and make sure that the diameter D1 is (nominal diameter : 62 mm (2.4409 in.).
Tolerance H7 : + 0, + 0.030 mm (+ 0, + 0.00118 in.).
(a)If the diameter D1 is not in the tolerance, bore the shackle (1) to the repair size diameter given in table 802 :

REPAIR SIZE	NOMINAL VALUE OF THE BORE D1 IN MM (IN.)	TOLERANCE IN MM (IN.)
R1	62.2 (2.4488)	H7 : + 0.030 (+0.00118) + 0 (+0)
R2	62.4 (2.4566)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	62.6 (2.4645)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	62.8 (2.4724)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	63 (2.4803)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	63.4 (2.4960)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	63.9 (2.5157)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	64.4 (2.5354)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 802
Repair Sizes of the Shackles at RIB12

(5)Quench the new bushes (2) in the liquid nitrogen.
(6)Install bushes (2) in the shackle (1) with Material No. 08-029.
(7)Rebore the bushes (2) to the diameter D2 (nominal diameter : 56 mm (2.20472 in.). Tolerance H7 : + 0, + 0.030 mm (+ 0, + 0.00118 in.).
(8)Respect the center-to-center distance X of 182.88 mm (7.2 in.) (+ 0.01, - 0.01 mm) (+ 0.00039, - 0.00039 in.).
(9)Clean the shackle (1) with Material No. 11-003.

D. Close-Up
(1)Install the shackles at RIB12 (Ref. 54-51-72, P. Block 401).



Bushes of the Shackles at RIB12
Figure 820

R AFT ATTACH FITTING (RIB18) - REMOVAL/INSTALLATION

R 1. Removal/Installation of the Shackles and the Ball Joint Assembly at RIB18

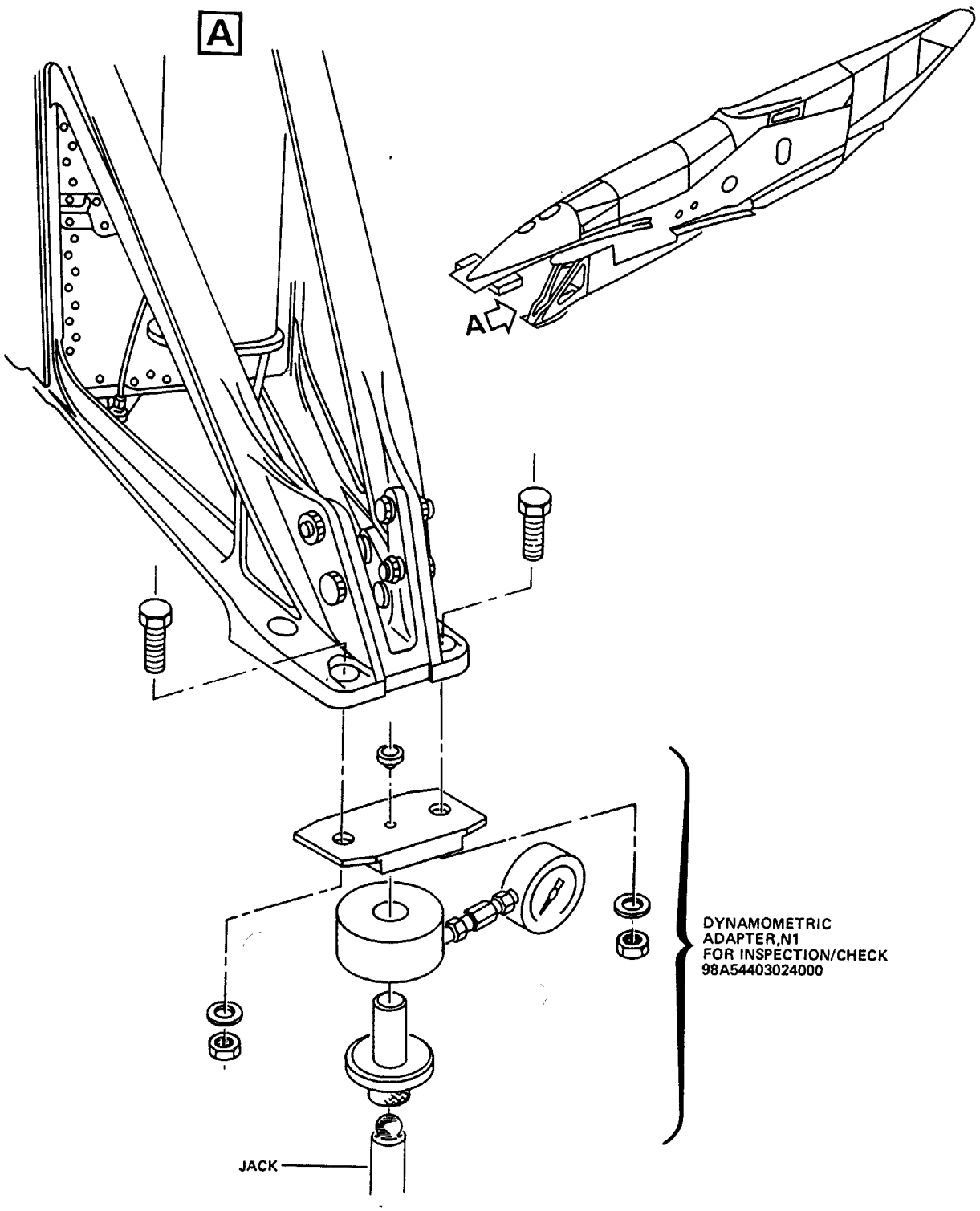
R A. Equipment and Materials

ITEM	DESIGNATION
R (1)98A54003022000	Extractor - Aft Attach Fitting Sleeve
R (2)98A54003084000	Inserting Tool - Aft Attach Fitting Sleeve
R (3)	Access Platform
R (4)65303A4351M000	Pin Wrench
R (5)	Torque Wrench 4 m.daN (29.5 lbf. ft)
R (6)98A54403024000	Adapter - Dynamometric, N1 for
R	Inspection/Check
R (7)98A54603005000	Torquage Tool
R (8)	Jack 10 Tonnes (23 000 lbf.) with Extension 2800 mm (110.2 in.)
R (9)98A54403021000	Protectives pads
R 10)65375AB351M000	Special Wrench
R 11)	Circuit Breakers Safety Clips
R 12)Material No. 04-004	Common Greases (Ref. 20-31-00)
R 13)Material No. 04-007	Common Greases (Ref. 20-31-00)
R 14)Material No. 05-002	Special Materials (Ref. 20-21-00)
R 15)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
R 16)	Key Washer
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance
R - 54-51-75, P. Block 601	Aft Attach Fitting (RIB18)
- 54-54-00, P. Block 401	Aft Fairing
- 71-00-00, P. Block 401	Power Plant

R

R B. Job Set-Up

(1)Remove engine (Ref. 71-00-00, P. Block 401).
(2)Install pylon access platform.
(3)Remove aft fairing (Ref. 54-54-00, P. Block 401).
(4)Jack-up the aircraft (Ref. 07-11-00, P. Block 1).
NOTE : It is not necessary to lift the aircraft wheels clear of ground jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.
Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.
(5)Remove the following fillets and skin panels :
on LH engine pylon 473BL (474BR)
on RH engine Pylon 483BL (484BR).
(6)Secure tool 98A54403024000 under pylon forward pyramid and on jack. (Ref. Fig. 401)
R (7)Position jack under pyramid and apply a vertical load of between
R 220 and 420 kg (485 and 925 lbf).
(8)Install inboard and outboard protective pads 98A54403021000



Installation of Dynamometric Adapter under
Pylon Forward Pyramid
Figure 401

R

R C. Procedure
R (1)Removal of shackles and sleeves (Ref. Fig. 402, 403)
R WARNING : CHECK THAT REQUIRED LOAD IS APPLIED BY JACK ON PYLON.
NOTE : Procedure is identical for each bolt and sleeve.
NOTE : Remove the lower sleeve first.
R (a)Remove and discard cotter pin (2).
R (b)Use pin wrench 65303A4351M000 to immobilize bolt (3) and slightly unscrew nut (4) using special wrench 65375AB351M000.
R (c)Extract bolt (3) and retain nut (4).
R (d)Remove and discard key washer (1); immobilize sleeve (6) using a thin spanner and remove nut (5) using special wrench 65375AB351M000.
R (e)Remove sleeves (6) using the extractors 98A54003022000.
NOTE : To facilitate removal of sleeves, apply a slight load on forward pyramid or act on both knurled nuts of tool 98A54403021000.
R (2)Removal of ball joint assembly (Ref. Fig. 404)
R (a)Install support included in tool 98A54603005000 on ball joint at RIB18.
R (b)Unfold tabs of keywasher to free nut.
R (c)Untighten nut using wrench included in tool 98A54603005000.
R (d)Remove support, ball joint, nut and keywasher.
R (3)Preparation of replacement components
CAUTION : AS SOME PYLON COMPONENTS ARE IN TITANIUM, CLEANING WITH CHLORINATED SOLVENT MAY RESULT IN SERIOUS DAMAGE.
R (a)Clean bolts, sleeves, shackles and washers with Material No. 11-003.
R (b)Perform visual check (Ref. 54-51-75, P. Block 601).
R (c)Clean outer ring and bore of ball joint.
R CAUTION : DO NOT APPLY CLEANING MATERIAL IN BALL JOINT HINGING AREA
R NOT TO DAMAGE AIRFLON FILM ENABLING ROTATION OF THE INNER
R RING INTO THE OUTER RING.
R (d)Visually inspect for corrosion, wear and structural defects.
R (4)Installation of ball joint assembly (Ref. Fig. 404)
R (a)Slightly smear outer ring of ball joint with Material No. 05-002 and install bal joint in fitting at RIB18.
R (b)Immobilize ball joint in fitting using support included in tool 98A54603005000
R (c)Install a new keywasher and nut. TORQUE nut to between 45 and 55 m.daN (331.8 and 405.6 lbf. ft.).
R (d)Secure nut using new keywasher.
R (e)Remove support.
R (5)Installation of shackles and sleeves (Ref. Fig. 402, 403)
NOTE : The installation procedure is identical for each bolt and sleeves.
R (a)Coat holes of attach fittings on wing and pylon with Material No. 04-004.
R (b)Position shackles and hold them in place.
R (c)Coat plain section of sleeves with Material No. 04-004 and thread with Material No. 04-007.
R (d)Install upper sleeves (50 mm dia.) and lower sleeves (60 mm dia.) using tool 98A54003084000.
NOTE : To facilitate installation of sleeves, apply a slight load on forward pyramid or screw both knurled nuts on tool 98A54403021000.
R (e)Before removing tool 98A54003084000, check that shackles and sleeves

are in correct position.
R (f)Install a new key washer (1).
R (g)Screw nut (5) without tightening until against sleeve (6).
R (h)Immobilize sleeve (6) and TORQUE nut (5) between 4 and 5 m.daN (29.5 and 36.8 lbf. ft) using tool 65375AB351M000 equipped with a dynamometric wrench.
R (j)Safety nut (5) by bending one tab of the key washer (1).
R (k)Coat thread of bolt (3) with Material No. 04-007 and insert bolt (3) into sleeve (6).
R (l)Immobilize bolt (3) using pin wrench 65303A4351M000 and tighten nut (4).
R (m)TORQUE nut (4) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (2).
R (6)Close-up
R (a)Remove outboard and inboard protective pads 98A54403021000.
R (b)Remove tool 98A54403024000 from Jack and pylon.
R (c)Install engine (Ref. 71-00-00, P. Block 401).
R (d)Install the following fillets and skin panels :
LH engine pylon : 473BL (474BR)
RH engine pylon : 483BL (484BR).
R (e)Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).
R (f)Install aft fairing (Ref. 54-54-00, P. Block 401).
R (g)Remove access platform.

R 2. Removal/Installation of the Aft Attach Fitting at RIB18

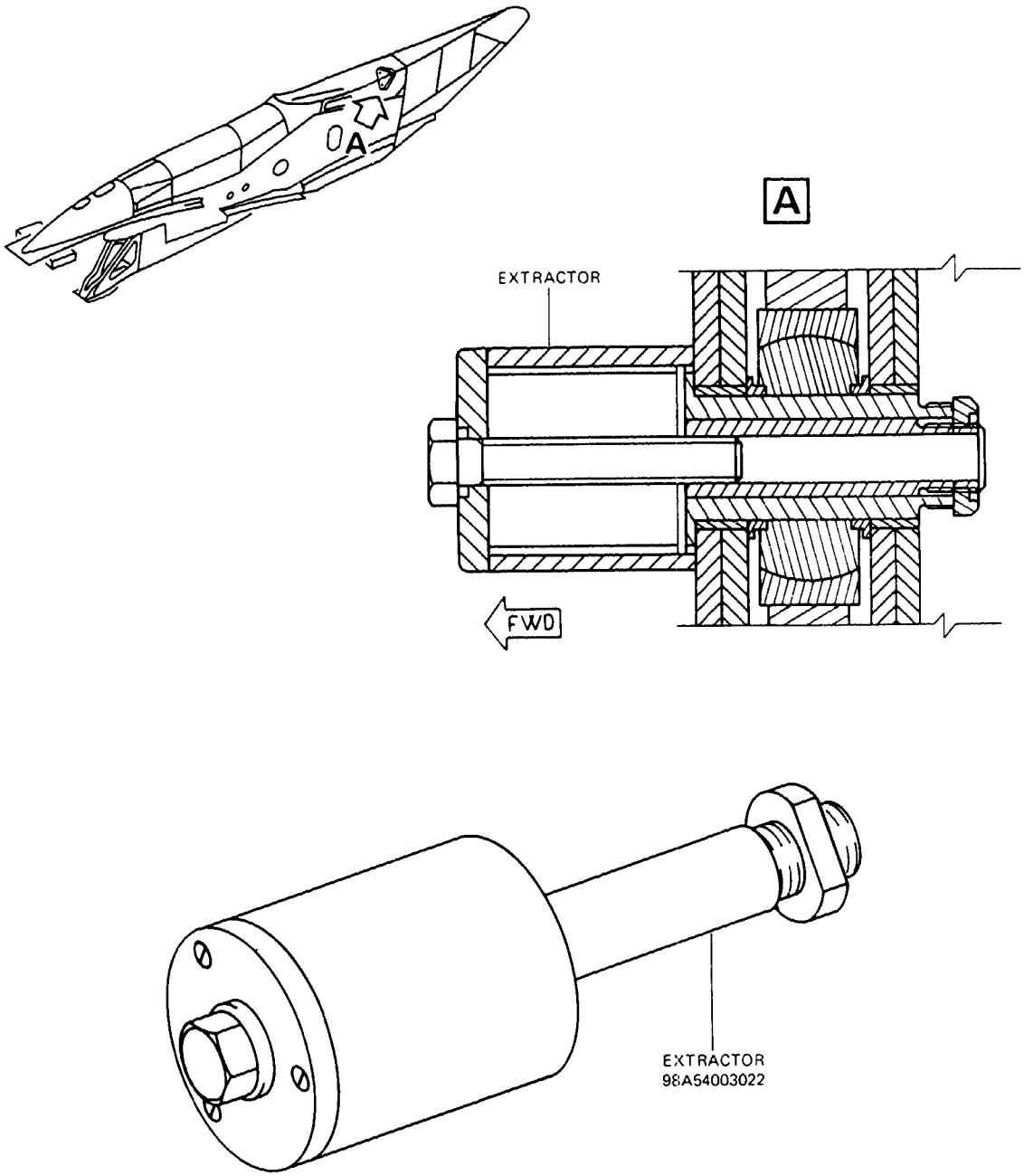
R A. Reason for the Job
R This procedure describes the Removal/Installation of aft attach fitting at R RIB18.

R B. Equipment and Materials

ITEM	DESIGNATION
(1)	Lockwire
(2) Material No. 11-003	Cleaning Agents (Ref. 20-31-00)

R C. Procedure
R (Ref. Fig. 405)
R (1)Remove the shackles at RIB18. Refer to paragraph 1.

R D. Procedure
R (1)Remove the old attach fitting (9) at RIB18 as follows.
R (a)Remove nuts (1), washers (2), bolts (5), (13), (14) and lockplates (6), (12), and (15).
R (b)Cut and remove lockwire, remove nuts (16), and (11).
R (c)Remove washers (17), (10), bolts (4), (7) and washers (3) and (8).
R (d)Remove bracket (20) and fitting (9).
R (2)Clean the new fitting with Material No. 11-003.
R (3)Install the new fitting (9) at RIB18 as follows :



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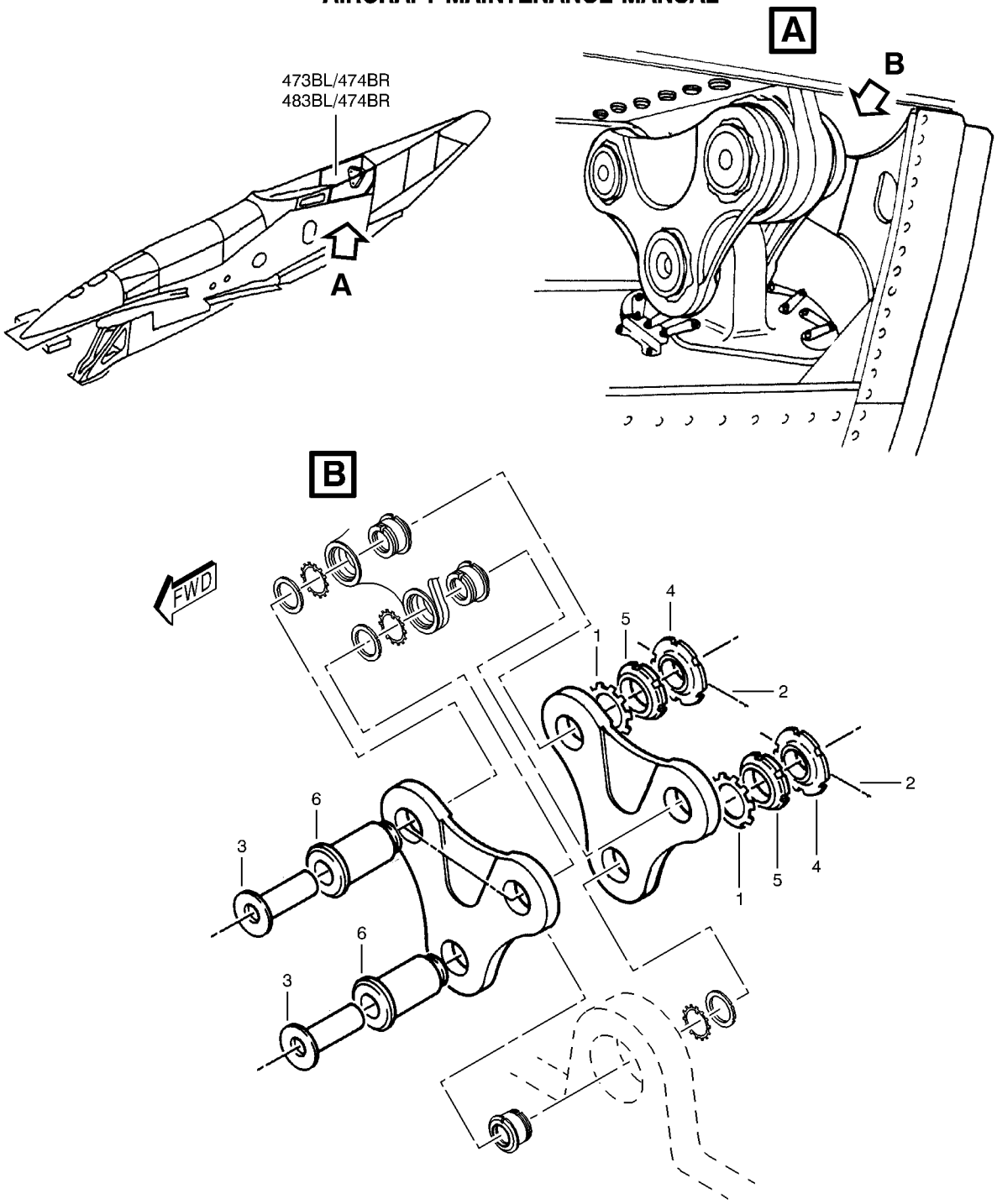
Removal of Sleeves
Figure 402



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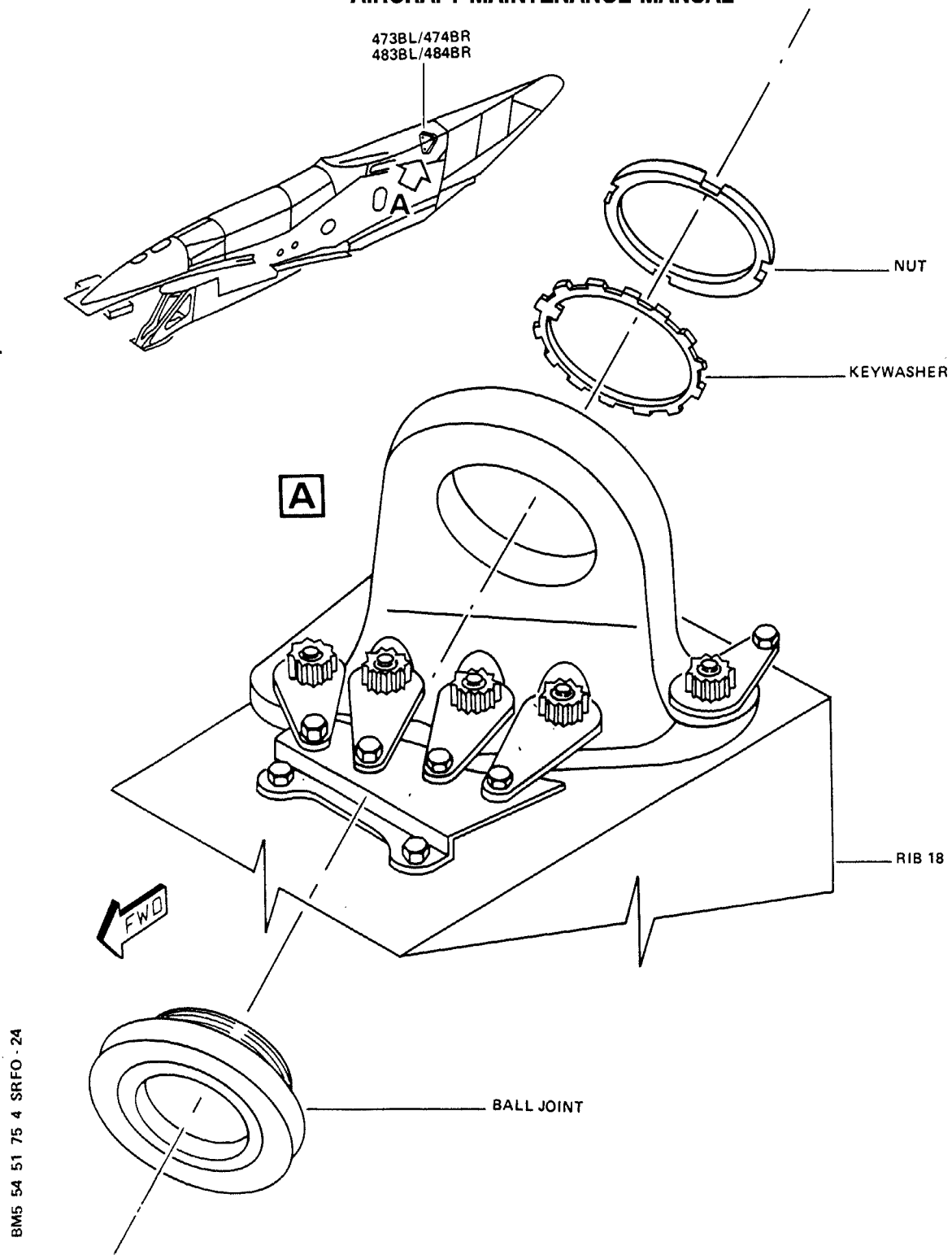
Aft Attach Fitting - Removal/Installation
Figure 403

R



Ball Joint Assembly
Figure 404

R (a)Install fitting (9) and bracket (20).
R (b)Install bolts (4), (7), washers (3), (8), (10) and (17). Tighten nuts (16), (11) and wirelock.
R (c)Install lockplates (6), (12) and (15).
R (d)Install bolts (14), (5), (13), washers (2) and nuts (1). Tighten nuts (1).

R E. Close-Up
R (1)Install the shackles at RIB18. Refer to paragraph 1.

R 3. Replacement of Aft Attach Fitting at RIB18 (Pylon installed on wing)

R A. Reason for the Job
R This procedure describes the replacement of aft attach fitting at RIB18 without pylon removal procedure by drilling bores into the new aft attach fitting to match holes of the old aft attach fitting.

B. Job Set-Up
(1)Remove the old fitting at RIB18. Refer to Para. 2.

C. Procedure
(Ref. Fig. 406)
(1)Install the old fitting and the new fitting on a duplicating milling machine.
NOTE : The bores D1 located on the front part of the fitting are already with the manufacturing dimensions, only the bores D2 and D3 located on the rear part of the fitting must be transferred and reamed.
(2)Use the old fitting accurately located on the new fitting, to position the bores. D2 and D3 which have to be reamed.
(3)On the new fitting ream the bores D2 and D3 to the final diameters as follows :
R (a)D2 must be between 22.199 and 22.222 mm (0.8740 and 0.8748 in.).
R (b)D3 must be between 19.025 and 19.045 mm (0.7490 and 0.7498 in.).

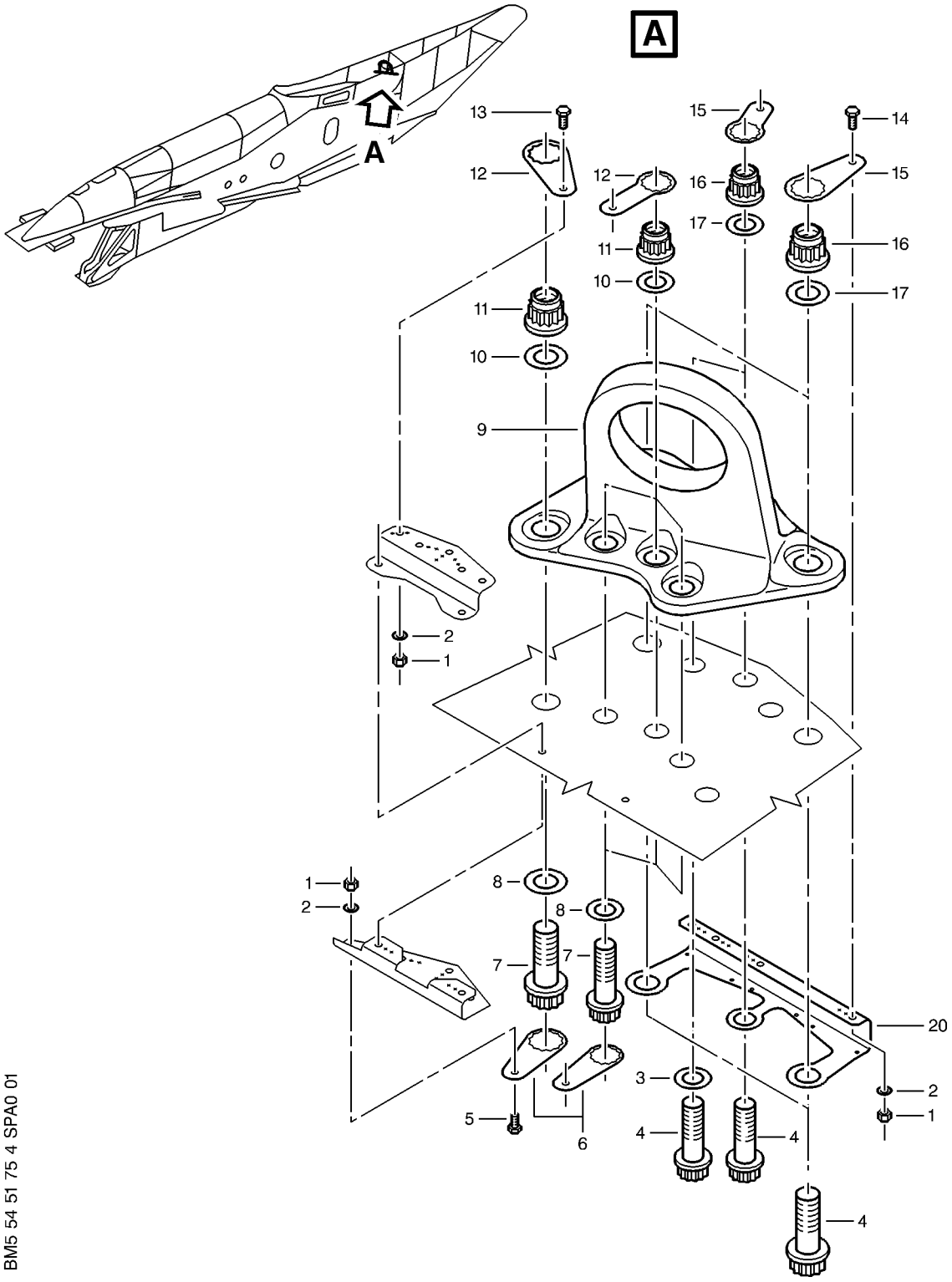
D. Close-Up
(1)Install the new fitting at RIB18. Refer to Para. 2.

R 4. Replacement of Aft Attach Fitting at RIB18 (Pylon Removed)

R A. Reason for the Job
This procedure describes the replacement of the aft attach fitting at RIB18 with the pylon removed by using a reaming tool.

B. Equipment and Materials

ITEM	DESIGNATION
(1) 98A54003118000	Reaming Tool-Aft Attach Fitting Bores at Pylon RIB18
Referenced Procedures	
- 54-50-00, P. Block 401	Pylon Removal/Installation



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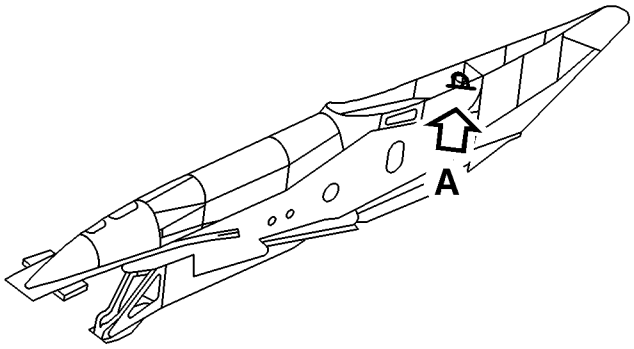
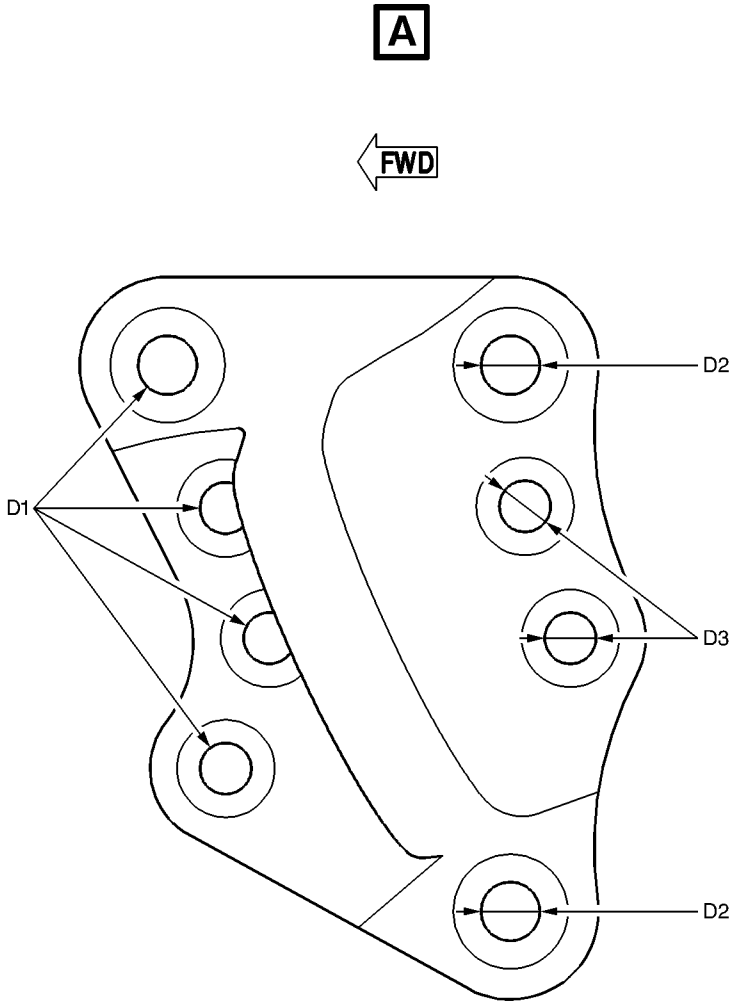
Aft Attach Fittings Assembly (RIB18)
Figure 405

R





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Aft Attach Fitting at RIB18 - Bore Diameters
Figure 406

R

C. Job Set-Up
(1)Remove the pylon (Ref. 54-50-00, P. Block 401).

D. Procedure
(Ref. Fig. 406)
(1)Remove the old aft attach fitting at RIB18. Refer to Para. 2.
(2)Installation of the new fitting at RIB18.
(a)Position the fitting.
(b)Install the fasteners related to the bores D1 located on the front part of the fitting.
(3)Reaming operation.
(a)Diameter of fitting bores.

BORE	NOMINAL DIAMETER	OVERSIZE DIAMETER
D2	22.199 mm (0.8740 in.) to 22.222 mm (0.8748 in.)	22.595 mm (0.8895 in.) to 22.618 mm (0.8904 in.)
D3	19.025 mm (0.7490 in.) to 19.045 mm (0.7948 in.)	19.421 mm (0.7646 in.) to 19.441 mm (0.7653 in.)

NOTE : The bores D1 located on the front part of the fitting are already with the manufacturing dimensions, only the bores D2 and D3 located on the rear part of the fitting must be reamed.

(b)Ream the bores D2 and D3 to the nominal diameter value with the pull reamers of the reaming tool 98A54003118000 corresponding to the bores D2 and D3 to be reamed.
(c)Visually inspect the bores D2 and D3. Make sure that they are not elongated and they are in good condition.
(d)If the bores D2 and D3 are damaged, ream to the oversize diameter value.
(e)Remove the fasteners from the bores D1 and remove the fitting.
(f)Deburr the bores D2 and D3 of the fitting.
(4)Installation of the new aft attach fitting at RIB18
(a)Install the new aft attach fitting at RIB18. Refer to Para. 2..
NOTE : If the bores D2 and D3 have to be reamed to the oversize diameter, oversize fasteners must be installed, refer to Para. (5).
(5)Installation of the new aft attach fitting at RIB18 with oversize fasteners.
(a)Use the oversize fasteners given in the table.

BORES	OVERSIZE FASTENERS	ITEM
D2	BOLT (NSA5398 14H16)	4
	WASHER (ASNA2394E14)	17 - 10

	BORES	OVERSIZE FASTENERS	ITEM
	D3	BOLT (NSA5398 12H16)	4
R		WASHER (ASNA2394E12)	17 - 10

(b)Reaming of the bracket (20) as follows :
1 For the bore D2 ream the bracket (20) to a diameter between 23 mm (0.9055 in.) and 23.1 mm (0.9094 in.)
2 For the bore D3, ream the bracket (20) to a diameter between 19.8 mm (0.7595 in.) and 19.9 mm (0.7834 in.).
3 Chamfer the hole of the bracket (20) to 1.7 mm (0.0669 in.) at 45° so that it matches with the bolt head radius.
(c)Install the aft attach fitting at RIB18. (Refer to Para. 2.).

E. Close-Up
(1)Install the pylon (Ref. 54-50-00, P. Block 401).

1. Removal/Installation of the Shackles and the Ball Joint Assembly at RIB18

A. Equipment and Materials

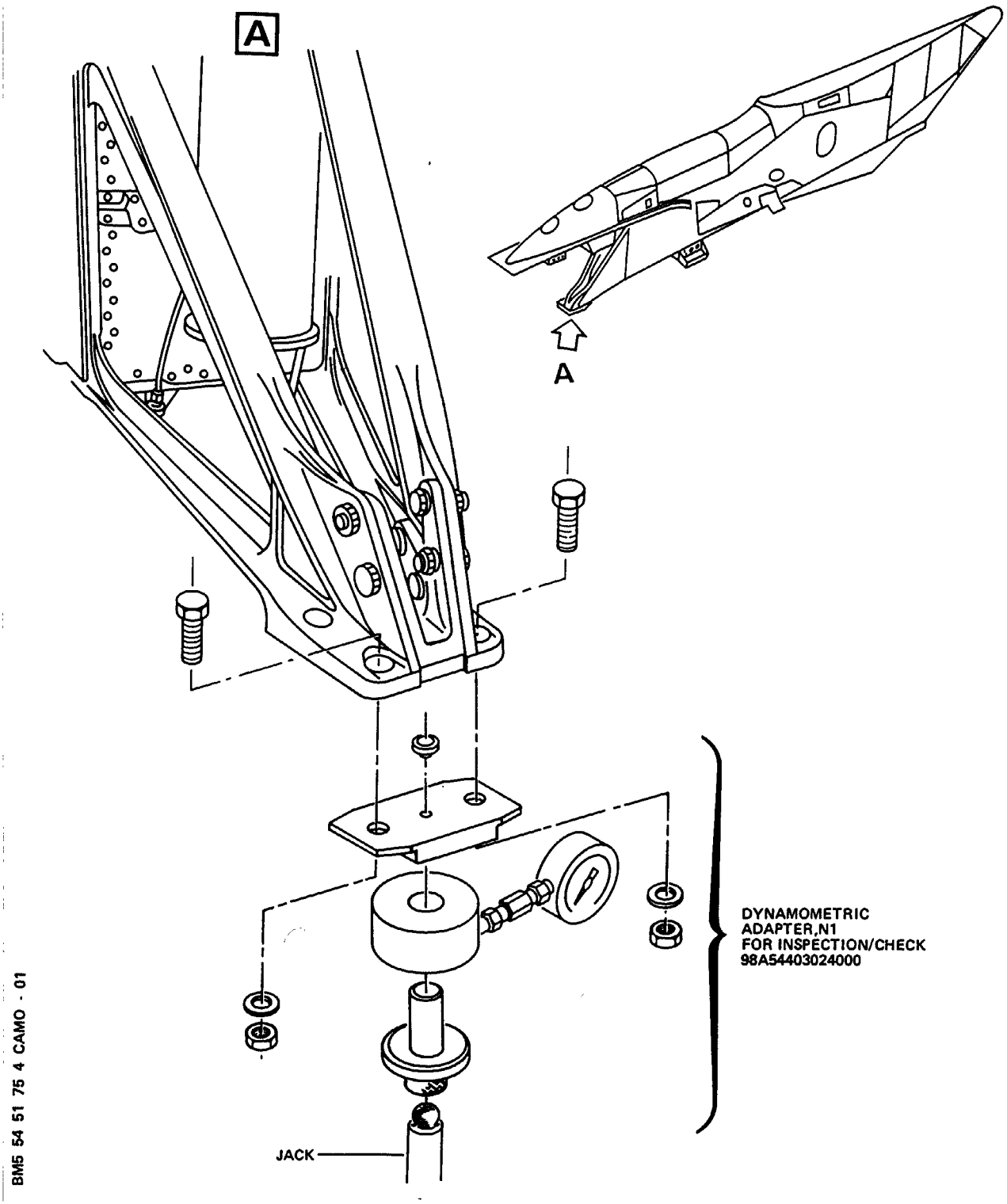
ITEM	DESIGNATION
(1)98A54003022000	Extractor - Aft Attach Fitting Sleeve
(2)98A54003084000	Inserting Tool - Aft Attach Fitting Sleeve
(3)	Access Platform
(4)65303A4351M000	Pin Wrench
(5)	Torque Wrench 4 m.daN (29.5 lbf. ft)
(6)	Jack 10 Tonnes (23 000 lb.) with Extension 2800 mm (110.2 in.)
(7)98A54403024000	Adapter - Dynamometric, N1 for Inspection/Check
(8)98A54603005000	Torquage Tool
(9)98A54403021000	Tool-Clamping, Shackle Removal RIB18
10)65375AB351M000	Special Wrench
11)	Circuit Breaker Safety Clips
12)Material No. 04-004	Common Greases (Ref. 20-31-00)
13)Material No. 04-007	Common Greases (Ref. 20-31-00)
14)Material No. 05-002	Special Materials (Ref. 20-31-00)
15)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
16)	Key Washer
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance
- 54-51-75, P. Block 601	Aft Attach Fitting (RIB18)
- 54-54-00, P. Block 401	Aft Fairing
- 71-00-00, P. Block 401	Power Plant

B. Job Set-Up

(1)Remove engine (Ref. 71-00-00, P. Block 401).
(2)Install pylon access platform.
(3)Remove aft fairing (Ref. 54-54-00, P. Block 401).
(4)Jack-up the aircraft (Ref. 07-11-00, P. Block 1).

NOTE : It is not necessary to lift the aircraft wheels clear of ground, jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.
Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.

(5)Remove the following fillets and skin panels :
on LH engine pylon 473BL (474BR)
on RH engine Pylon 483BL (484BR).
(6)Secure tool 98A54403024000 under pylon forward pyramid and on jack. (Ref. Fig. 401)
(7)Position jack under pyramid and apply a vertical load of between 220 and 420 kg (485 and 925 lbf).
(8)Install inboard and outboard tool - clamping, shackle, removal RIB18 98A54403021000



Installation of Dynamometric Adapter under
Pylon Forward Pyramid
Figure 401

(Ref. Fig. 402)

C. Procedure

(1)Removal of shackles and sleeves (Ref. Fig. 403, 404, 405)

WARNING : CHECK THAT REQUIRED LOAD IS APPLIED BY JACK ON PYLON.

NOTE : Procedure is identical for each bolt and sleeve.

NOTE : Remove the lower sleeve first.

(a)Remove and discard cotter pin (2).

(b)Use pin wrench 65303A4351M000 to immobilize bolt (3) and slightly unscrew nut (4) using special wrench 65375AB351M000.

(c)Extract bolt (3) and retain nut (4).

(d)Remove and discard key washer (1); immobilize sleeve (6) using a thin spanner and remove nut (5) using special wrench 65375AB351M000.

(e)Remove sleeves (6) using extractors 98A54003022000.

NOTE : To facilitate removal of sleeves, apply a slight load on forward pyramid or act on both knurled nuts of tool 98A54403021000.

(2)Removal of ball joint assembly (Ref. Fig. 406)

(a)Install support included in tool 98A54603005000 on ball joint at RIB18.

(b)Unfold tabs of keywasher to free nut.

(c)Untighten nut using wrench included in tool 98A54603005000.

(d)Remove support, ball joint, nut and keywasher.

(3)Preparation of replacement components

CAUTION : AS SOME PYLON COMPONENTS ARE IN TITANIUM, CLEANING WITH CHLORINATED SOLVENTS MAY RESULT IN SERIOUS DAMAGE.

(a)Clean bolts, sleeves, shackles and washers with Material No.11-003.

(b)Perform visual check (Ref. 54-51-75, P. Block 601).

(c)Clean outer ring and bore of ball joint. Do not apply cleaning Material in ball joint hinging area not to damage AIRFLOW film enabling rotation of the inner ring into the outer ring.

(d)Visually inspect for corrosion, wear and structural defects.

(4)Installation of ball joint assembly

(a)Slightly smear outer ring of ball joint with Material No. 05-002 and install ball joint in fitting at RIB18.

(b)Immobilize ball joint in fitting using support included in tool 98A54603005000.

(c)Install a new keywasher and nut. TORQUE nut to between 45 and 55 m.daN (331.8 and 405.6 lbf. ft.).

(d)Secure nut using new keywasher.

(e)Remove support.

(5)Installation of shackles and sleeves (***//CCMO//CEMO//CGMO//***)

**ON A/C 001-005,

NOTE : The installation procedure is identical for each bolt and sleeve.

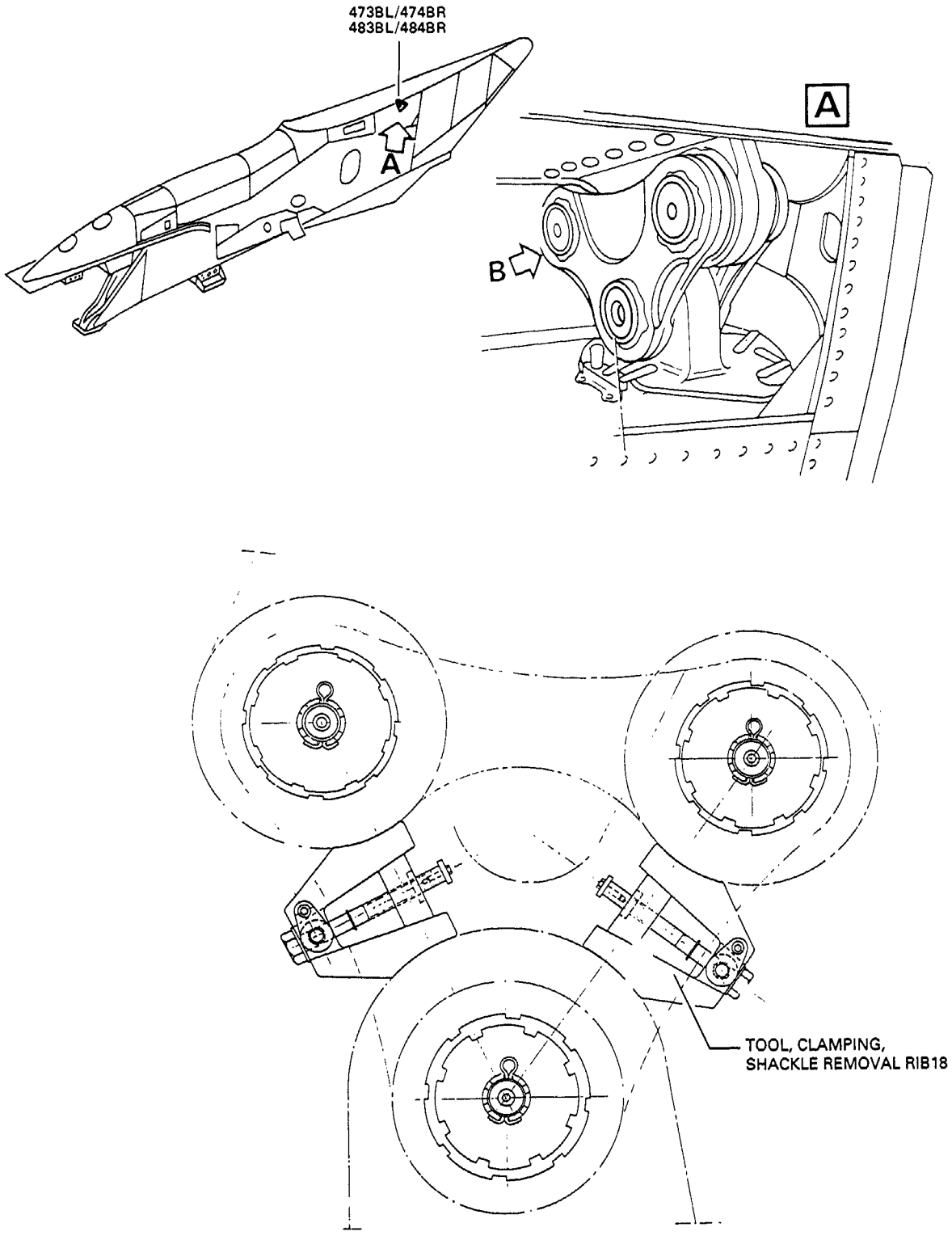
NOTE : Install upper sleeves first.

(a)Coat holes of attach fittings on wing and pylon with Material No. 04-004.

(b)Position shackles and hold them in place.

(c)Coat plain section of sleeves with Material No. 04-004 and thread with Material No. 04-007.

(d)Install upper sleeves (50 mm dia.) and lower sleeves (60 mm dia.) using



Installation of Tool - Clamping, Shackle Removal RIB18
Figure 402

tool 98A54003084000.

**ON A/C 006-100,

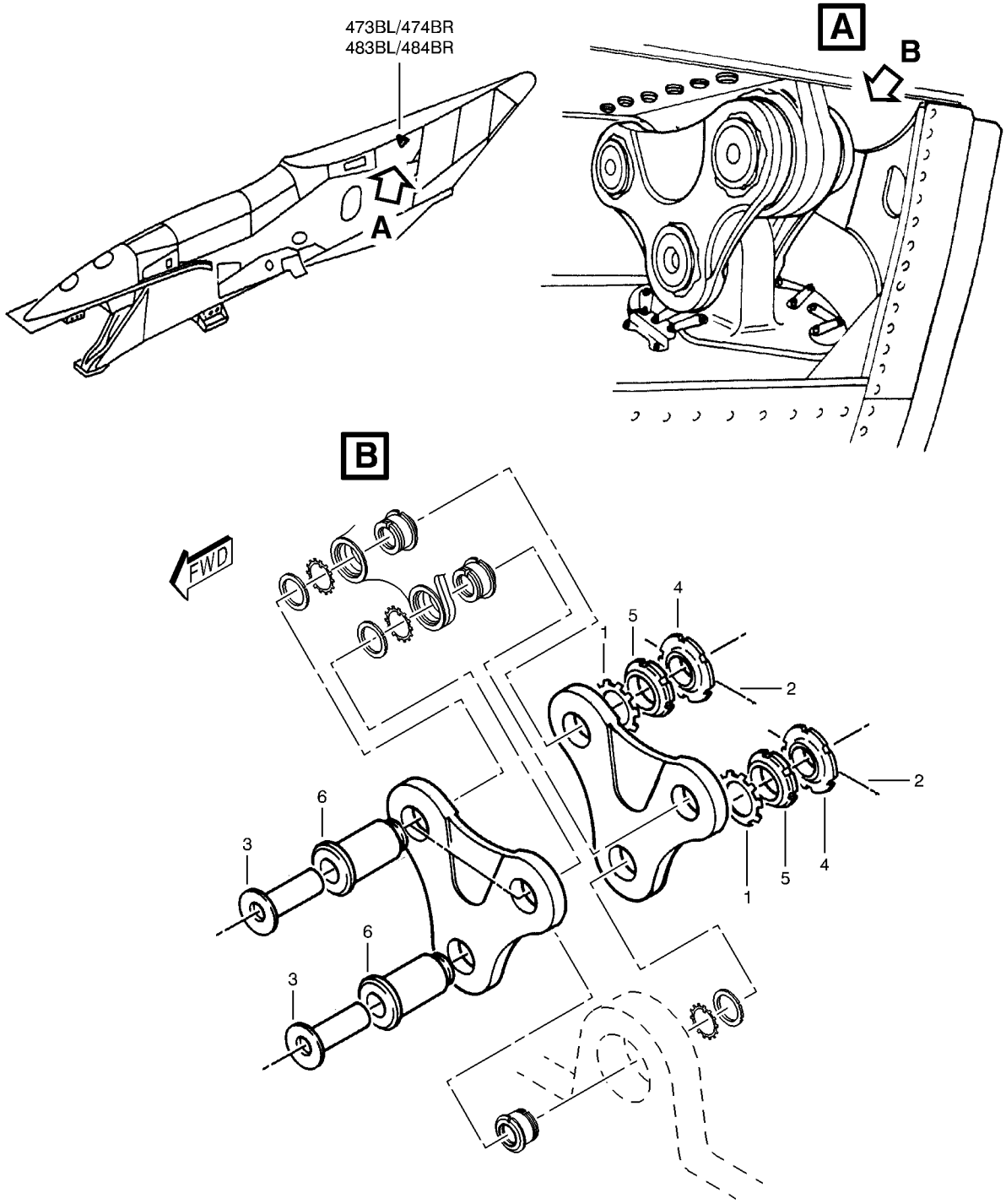
NOTE : The installation procedure is identical for each bolt and sleeve.
NOTE : Install upper sleeves first.
(a)Coat holes of attach fittings on wing and pylon with Material No. 04-004.
(b)Position shackles and hold them in place.
(c)Coat plain section of sleeves with Material No. 04-004.
(d)Install upper sleeves (50 mm dia.) and lower sleeves (60 mm dia.) using tool 98A54003084000.

R **ON A/C 001-100,

NOTE : To facilitate installation of sleeves, apply a slight load on forward pyramid or screw both knurled nuts of tool 98A54403021000.
(e)Before removing tool 98A54003084000, check that shackles and sleeves are in correct position.
(f)Install a new key washer (1).
(g)Screw nut (5) without tightening until against sleeve (6).
(h)Immobilize sleeve (6) and TORQUE nut (5) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench.
(j)Safety nut (5) by bending one tab of the key washer (1).
(k)Coat thread of bolt (3) with Material No. 04-007 and insert bolt (3) into sleeve (6).
(l)Immobilize bolt (3) using pin wrench 65303A4351M000 and tighten nut (4).
(m)TORQUE nut (4) to between 4 and 5 m.daN (29.5 and 36.8 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (2).
(6)Close-up
(a)Remove outboard and inboard tool-clamping, shackle, removal RIB18 98A54403021000.
(b)Remove tool 98A54403024000 from jack and pylon.
(c)Install engine (Ref. 71-00-00, P. Block 401).
(d)Install the following fillets and skin panels :
LH engine pylon : 473BL (474BR)
RH engine pylon : 483BL (484BR).
(e)Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).
(f)Install aft fairing (Ref. 54-54-00, P. Block 401).
(g)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(h)Remove access platform.

2. Removal/Installation of Fitting at RIB18

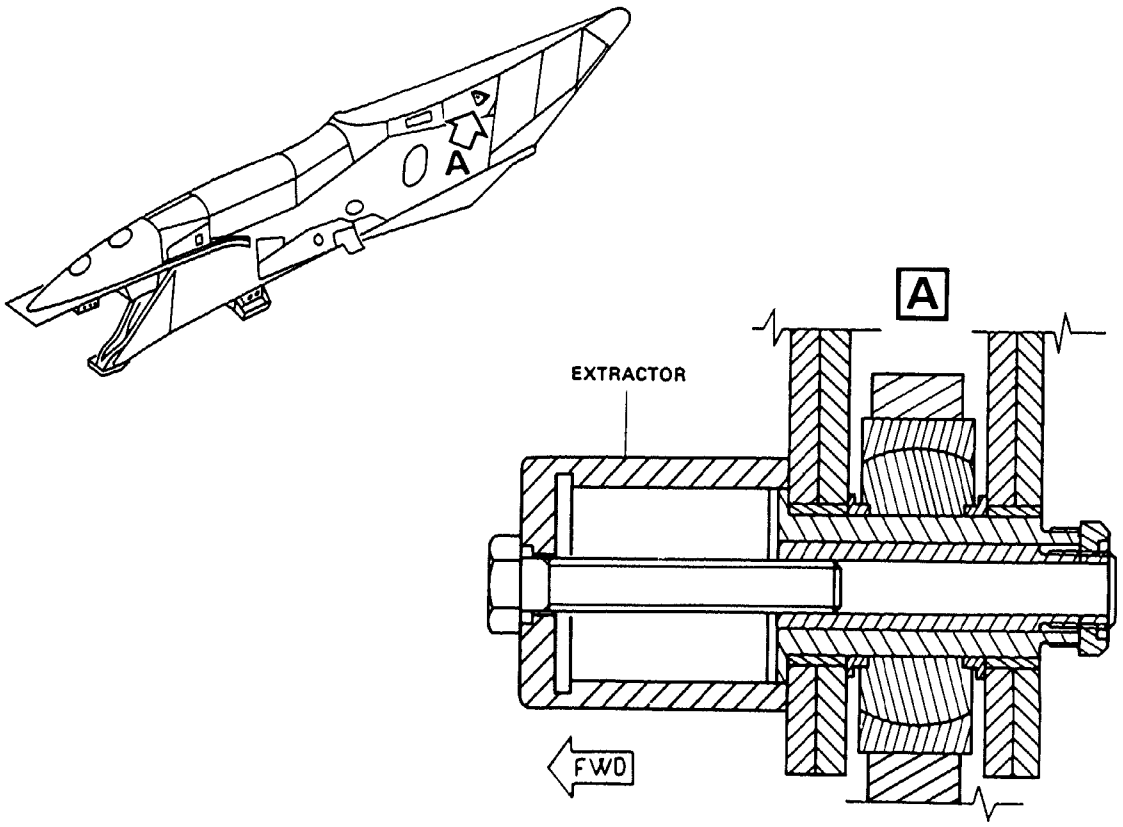
A. Reason for the Job
This procedure describes the Removal/Installation of aft attach fitting at RIB18.

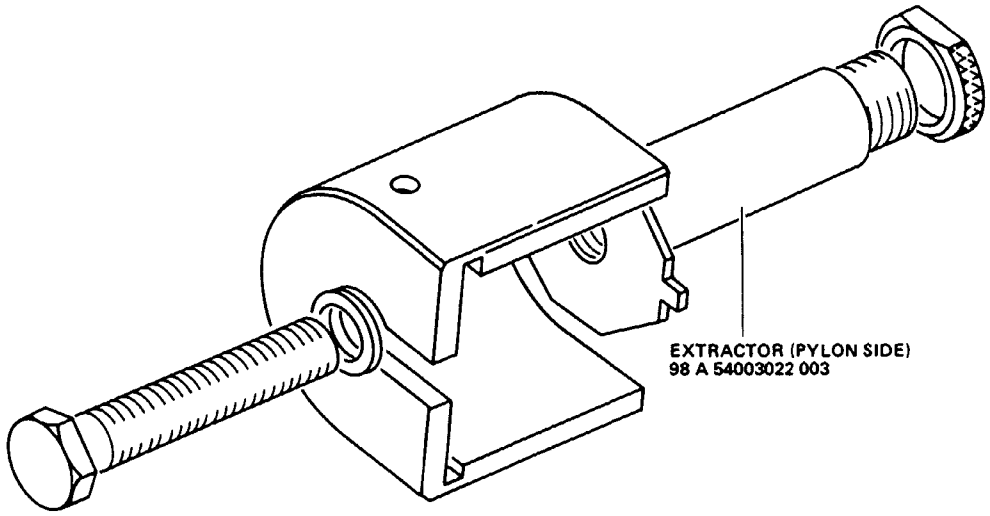


BM5 54 51 75 4 CCM0 16

Aft Attach Fitting - Removal/Installation
Figure 403

R





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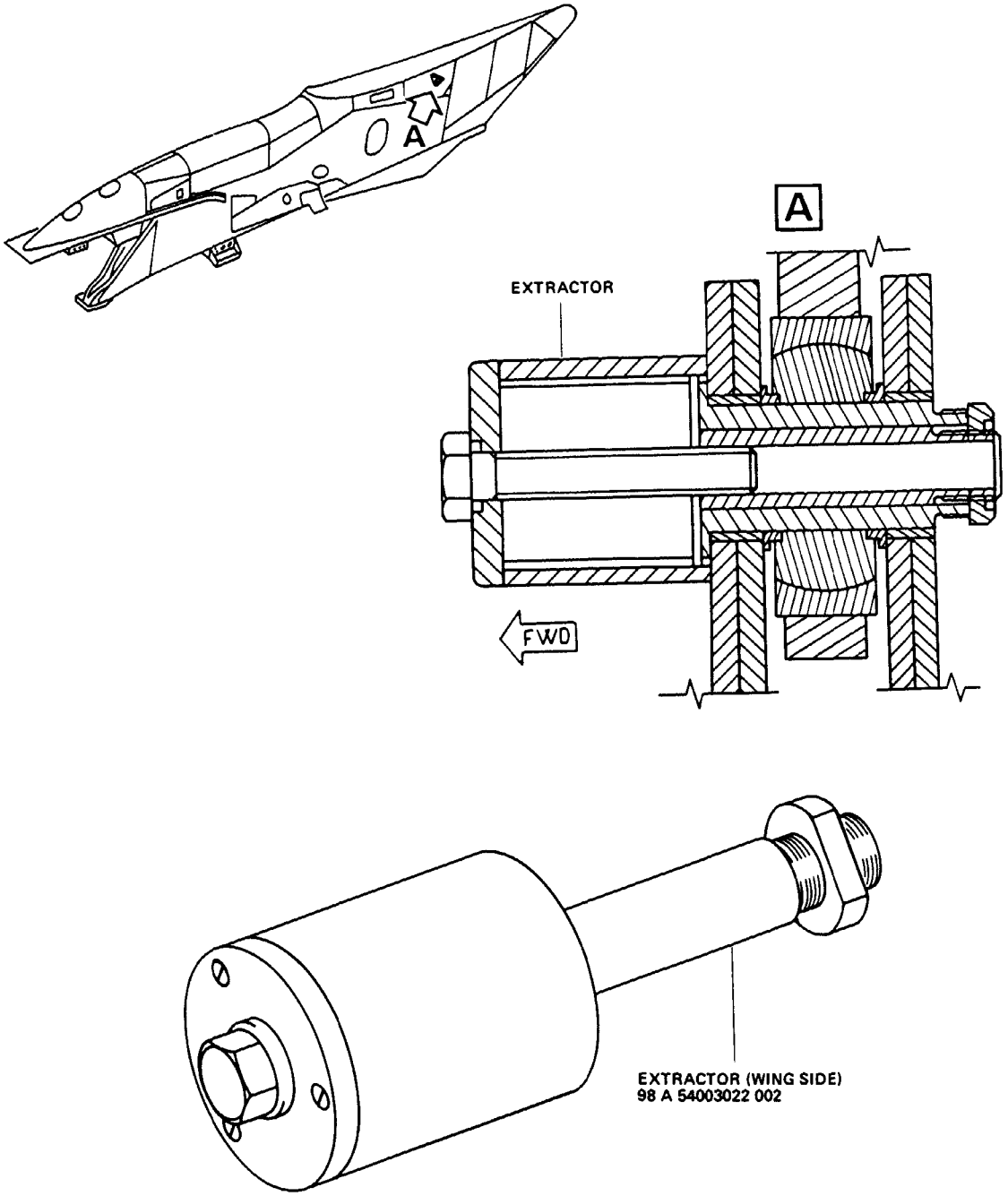
Removal of Sleeves
Figure 404



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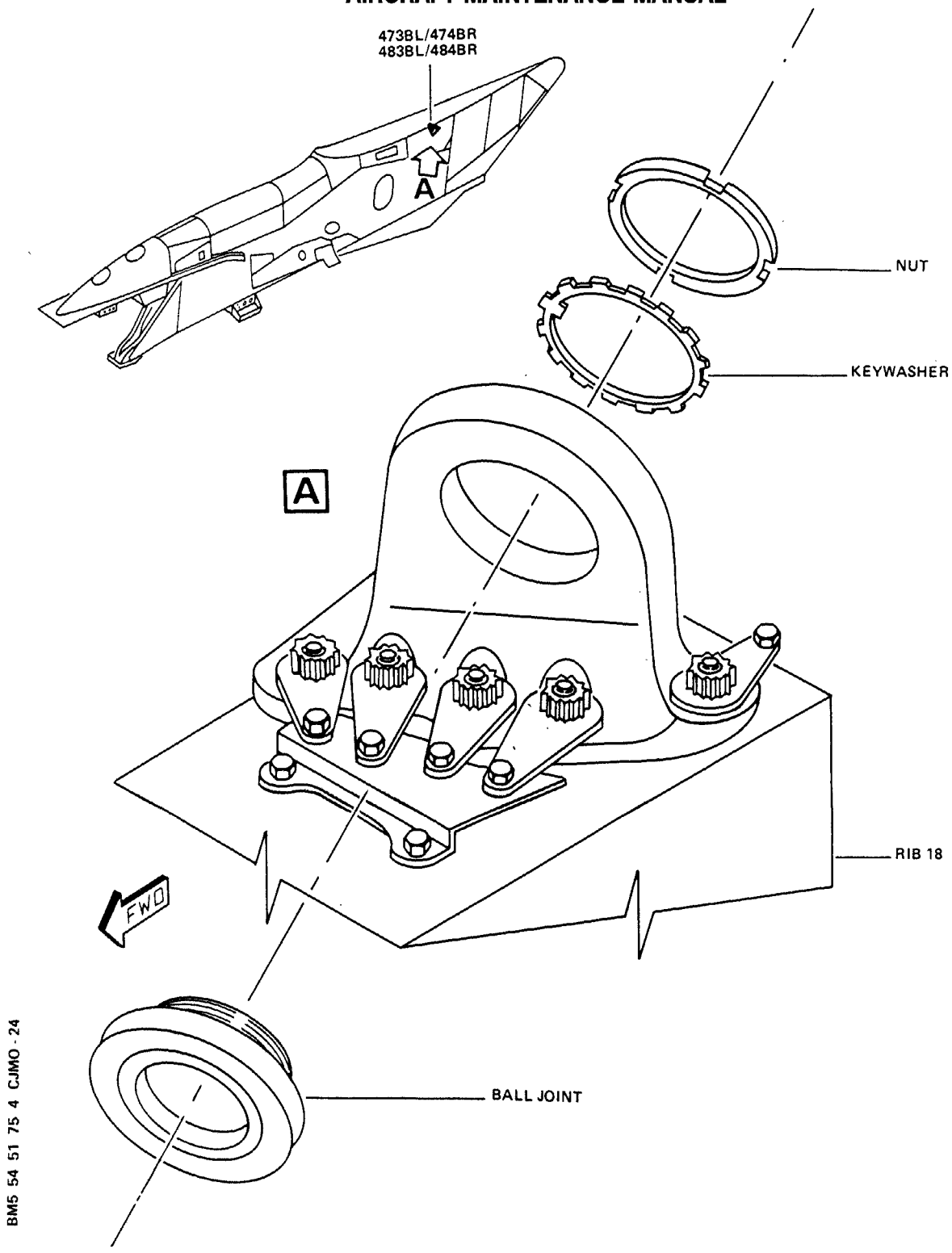
Removal of Sleeves
Figure 405



Ball Joint Assembly
Figure 406

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Lockwire
(2) Material No. 11-003	Cleaning Agents (Ref. 20-31-00)

C. Job Set-Up
(Ref. Fig. 407)
(1)Remove the shackles at RIB18. Refer to paragraph 1.
(2)Remove the old attach fitting (9) at RIB18 as follows :
(a)Remove nuts (1), washers (2), bolts (5), (13), (14) and lockplates (6), (12) and (15).
(b)Cut and remove lockwire, remove nuts (16), and (11).
(c)Remove washers (17), (10), bolts (4), (7) and washers (3) and (8).
(d)Remove bracket (20) and fitting (9).
(3)Clean the new fitting with Material No. 11-003.
(4)Install the new fitting (9) at RIB18 as follows :
(a)Install fitting (9) and bracket (20).
(b)Install bolts (4), (7), washers (3), (8), (10) and (17). Tighten nuts (16), (11) and wirelock.
(c)Install lockplates (6), (12) and (15).
(d)Install bolts (14), (5), (13), washers (2) and nuts (1). Tighten nuts (1).

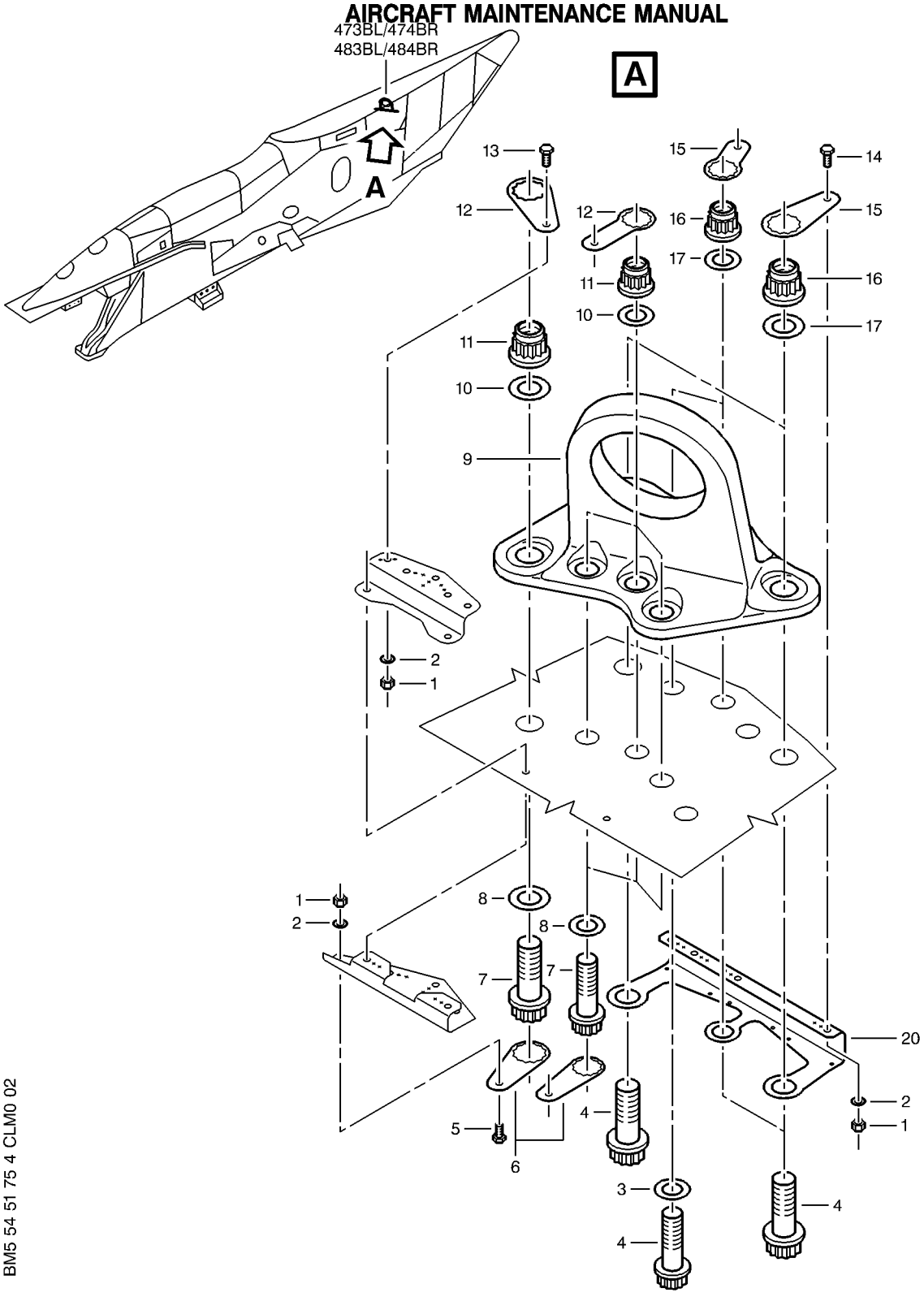
E. Close-Up
(1)Install the shackles at RIB18. Refer to paragraph 1.

3. Replacement of Aft Attach Fitting at RIB18 (Pylon Installed on Wing)

A. Reason for the Job
This procedure describes the replacement of aft attach fitting at RIB18 without pylon removal procedure by drilling bores into the new aft attach fitting to match hole of the old aft attach fitting.

B. Job Set-Up
(1)Remove the old fitting at RIB18. Refer to Para. 2..

C. Procedure
(Ref. Fig. 408)
(1)Install the old fitting and the new fitting on a duplicating milling machine.
NOTE : The bores D1 located on the front part of the fitting are already with the manufacturing dimensions, only the bores D2 and D3 located on the rear part of the fitting must be transferred and reamed.
(2)Use the old fitting accurately located on the new fitting, to position the bores. D2 and D3 which have to be reamed.
(3)On the new fitting ream the bores D2 and D3 to the final diameters as follows :



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Aft Attach Fittings Assembly (RIB18)
Figure 407

(a)D2 must be between 22.199 and 22.222 mm (0.8740 and 0.8748 in.).
(b)D3 must be between 19.025 and 19.045 mm (0.7490 and 0.7498 in.).

D. Close-Up
(1)Install the new fitting at RIB18. Refer to Para. 2..

4. Replacement of Aft Attach Fitting at RIB18 (Pylon Removed)

A. Reason for the Job
This procedure describes the replacement of the aft attach fitting at RIB18 with the pylon removed by using a reaming tool.

B. Equipment and Materials

ITEM	DESIGNATION
(1) 98A54003118000	Reaming Tool-Aft Attach Fitting Bores at Pylon RIB18
Referenced Procedures - 54-50-00, P. Block 401	Pylon Removal/Installation

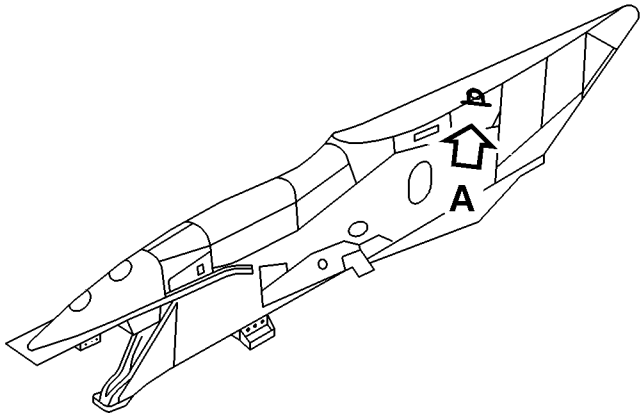
C. Job Set-Up
(1)Remove the pylon (Ref. 54-50-00, P. Block 401).

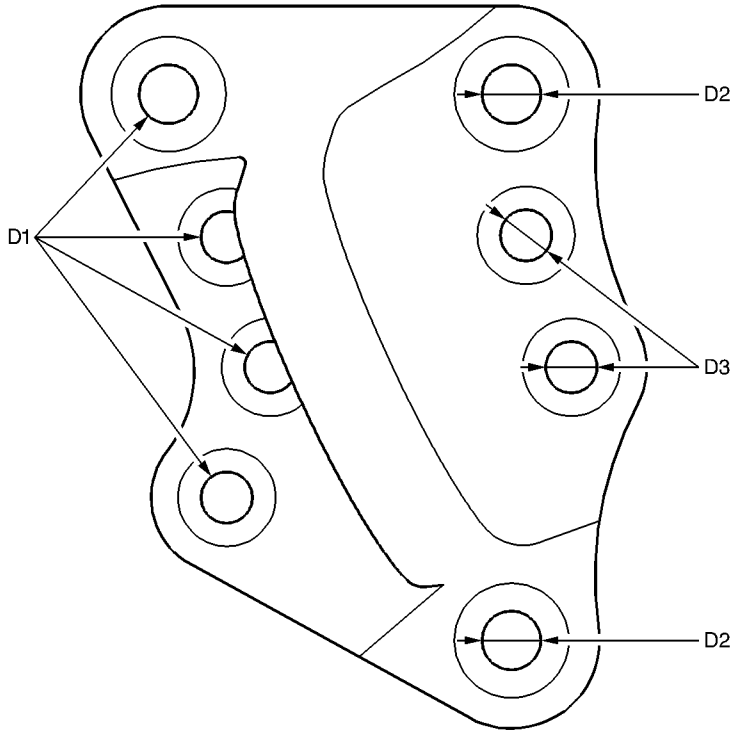
D. Procedure
(Ref. Fig. 408)
(1)Remove the old aft attach fitting at RIB18. Refer to Para. 2..
(2)Installation of the new fitting at RIB18.
(a)Position the fitting.
(b)Install the fasteners related to the bores D1 located on the front part of the fitting.
(3)Reaming operation.
(a)Diameter of fitting bores.

BORE	NOMINAL DIAMETER	OVERSIZE DIAMETER
D2	22.199 mm (0.8740 in.) to 22.222 mm (0.8748 in.)	22.595 mm (0.8895 in.) to 22.618 mm (0.8904 in.)
D3	19.025 mm (0.7490 in.) to 19.045 mm (0.7948 in.)	19.421 mm (0.7646 in.) to 19.441 mm (0.7653 in.)

NOTE : The bores D1 located on the front part of the fitting are already with the manufacturing dimensions, only the bores D2 and D3 located on the rear part of the fitting must be reamed.

(b)Ream the bores D2 and D3 to the nominal diameter value with the pull reamers of the reaming tool 98A54003118000 corresponding to the bores D2 and D3 to be reamed.





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Aft Attach Fitting at RIB18 - Bore Diameters
Figure 408

(c)Visually inspect the bores D2 and D3. Make sure that they are not elongated and they are in good condition.
(d)If the bores D2 and D3 are damaged, ream to the oversize diameter value.
(e)Remove the fasteners from the bores D1 and remove the fitting.
(f)Deburr the bores D2 and D3 of the fitting.

(4)Installation of the new aft attach fitting at RIB18.
(a)Install the new aft attach fitting at RIB18. Refer to Para. 2..
NOTE : If the bores D2 and D3 have to be reamed to the oversize diameter, oversize fasteners must be installed, refer to Para. (5).

(5)Installation of the new aft attach fitting at RIB18 with oversize fasteners.
(a)Use the oversize fasteners given in the table.

BORES	OVERSIZE FASTENERS	ITEM
D2	BOLT (NSA5398-14H16)	4
	WASHER (ASNA2304E14)	17 - 10
D3	BOLT (NSA5398-12H16)	4
	WASHER (ASNA2394E12)	17 - 10

(b)Reaming of the bracket (20) as follows :
1 For the bore D2, ream the bracket (20) to a diameter between 23 mm (0.9055 in.) and 23.1 mm (0.9094 in.)
2 For the bore D3, ream the bracket (20) to a diameter between 19.8 mm (0.7595 in.) and 19.9 mm (0.7834 in.).
3 Chamfer the hole of the bracket (20) to 1.7 mm (0.0669 in.) at 45° so that it matches with the bolt head radius.
(c)Install the new aft attach fitting at RIB18. (Refer to Para. 2.).

E. Close-Up
(1)Install the pylon (Ref. 54-50-00, P. Block 401).

1. Inspection of Fail-Safe Bolts, Sleeves, Yokes and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-75, P. Block 401	Aft Attach Fitting (RIB18)
- 54-51-72, P. Block 601	Forward Attach Fitting (RIB12)
R - SRM/54-51-71, P. Block 101	

B. Procedure

(1)Job set-up

(a)Remove aft attach fitting (Ref. 54-51-75, P. Block 401).

(2)Inspection

(a)Visually inspect the following items (Ref. table 601),
R (Ref. SRM 54-51-71, P. Block 101):

- yokes attached to main frame and wing
- fail-safe bolts
- shackles
- sleeves.

	Yoke Pylon side Wing side	Shackles	Fail-safe bolts	Sleeves
Superficial wear	Repair as per manufacturer's instructions	Refer to manufacturer's instructions	Replace	Replace
Deformation	Repair as per manufacturer's instructions	Replace	Replace	Replace
Corrosion	Repair as per manufacturer's instructions			Replace
Structural defects	Repair as per manufacturer's instructions	Replace	Replace	Replace
R Bore deformation	Replace bushes	Replace bushes		Replace
R Wear on bore	Replace bushes	Replace bushes		Replace

R Inspection of Pylon-to-Wing Aft Attach Fitting
R Table 601

R NOTE : In case of wear being evidenced on sleeves and/or shackles,
R it is mandatory to check forward attach fittings for condition
R (Ref. 54-51-72, P. Block 601).

(3)Close-up
(a)Install aft attach fitting (Ref. 54-51-75, P. Block 401).

R 2. Dimensional Checks of Aft Attach Fitting

R A. Reason for the Job
R (1)Check of fits and clearances after removal of pylon.

R B. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-75, P. Block 401	Aft Attach Fitting (RIB 18)
- 54-51-75, P. Block 801	Aft Attach Fitting (RIB 18)

R C. Procedure
R (1)Job set-up
R (a)Remove aft attach fitting (Ref. 54-51-75, P. Block 401).
R (2)Inspection
R (a)Check the following conditions :
R (Ref. Fig. 601)
R NOTE : When wear limits are exceeded, replace bushes (Ref. 54-51-75,
R P. Block 801).
R CAUTION : NO WEAR, DISTORTION OR STRUCTURAL DEFECT OF BOLT AND BUSH
R STEEL OR PLATING IS ALLOWED. DISCARD BOLT OR BUSH AS
R NECESSARY.
R 1 For aft attach fitting - lower bushes

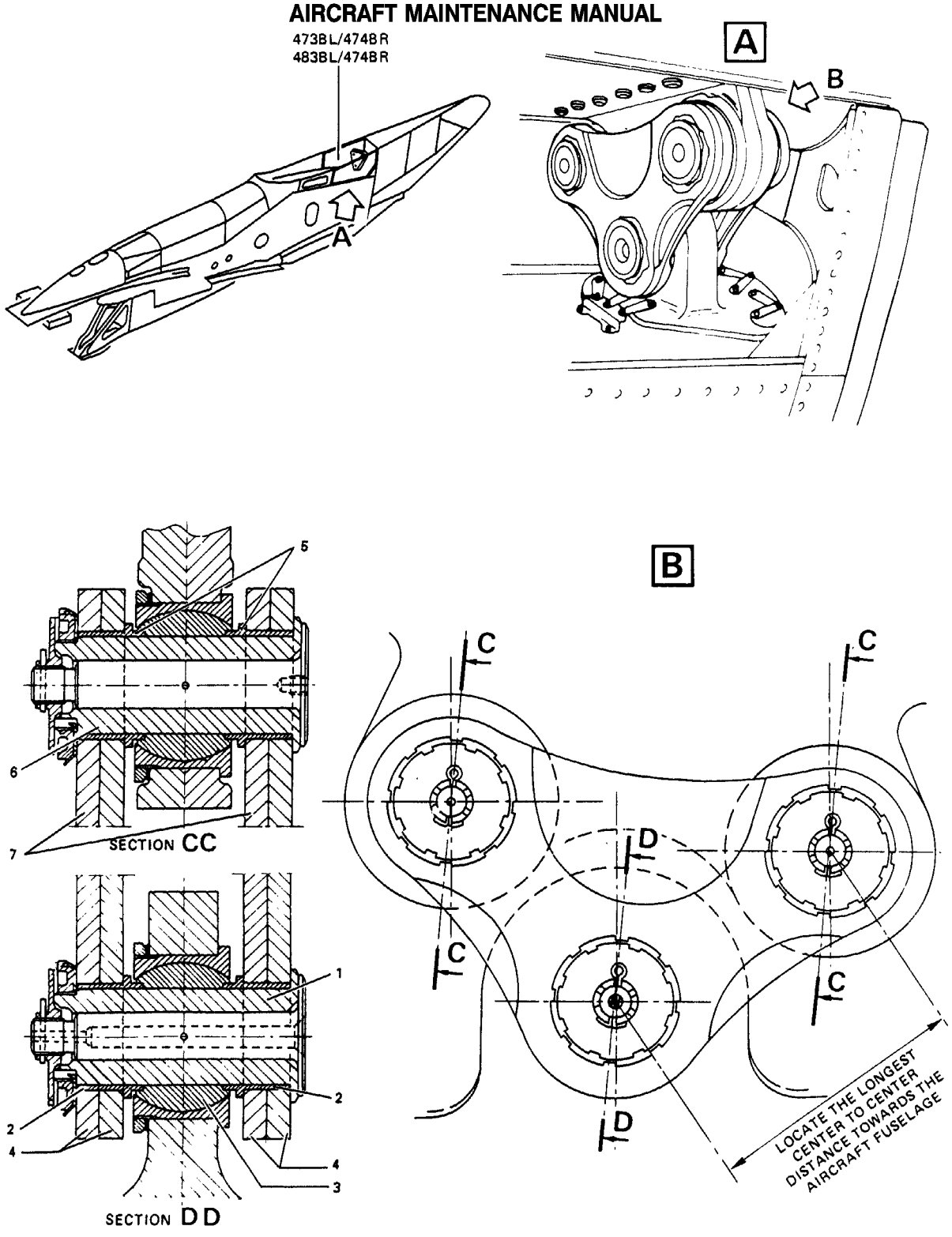
	Original Mfg Limits				In-Service Wear Limits		
Detail and Item No.	Dimension Inches (Millimeters) Min.	Dimension Inches (Millimeters) Max.	Assy. Clearance Inches (Millimeters) Min.	Assy. Clearance Inches (Millimeters) Max.	Dimension Limits Inches (Millimeters) Min.	Dimension Limits Inches (Millimeters) Max.	Max. Allow. Clear in. (mm)
D							
OD1	2.3611 (59.971)	2.3618 (59.990)			2.3602 (59.951)		
			0.0004 (0.010)	0.0023 (0.059)			0.0047 (0.12)
ID2	2.3622 (60.000)	2.3634 (60.030)				2.3649 (60.070)	
OD1	2.3611 (59.971)	2.3618 (59.990)					
			0.0004	0.0023			0.0047

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
			(0.010)	(0.059)			(0.12)
ID3	2.3622 (60.000)	2.3634 (60.030)					
OD2	2.6008 (66.059)	2.6015 (66.078)	-0.0030 (-0.078)	-0.0011 (-0.029)	2.6003 (66.049)		0.00
ID4	2.5984 (66.000)	2.5996 (66.030)				2.6003 (66.050)	

2 For aft attach fitting - upper bushes

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
C							
OD6	1.9674 (49.971)	1.9681 (49.990)			1.9665 (49.951)		
			0.0004 (0.010)	0.0023 (0.059)			0.0047 (0.12)
ID5	1.9685 (50.000)	1.9697 (50.030)				1.9712 (50.070)	
OD5	2.2068 (56.053)	2.2076 (56.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.2064 (56.045)		0.00
ID7	2.2047 (56.000)	2.2059 (56.030)				2.2065 (56.046)	

(3)Close-up
(a)Install aft attach fitting (Ref. 54-51-75, P. Block 401).



Aft Attach Fitting
Figure 601

R

1. Inspection of Fail-Safe Bolts, Sleeves, Yokes and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-75, P. Block 401	Aft Attach Fitting (RIB18)
- 54-51-72, P. Block 601	Forward Attach Fitting (RIB12)
- SRM/54-51-71, P. Block 101	

B. Procedure

(1)Job set-up

(a)Remove aft attach fitting (Ref. 54-51-75, P. Block 401).

(2)Inspection

(a)Visually inspect the following items (Ref. table 601), (Ref. SRM 54-51-71, P. Block 101):

- yokes attached to main frame and wing
- fail-safe bolts
- shackles
- sleeves.

	Yoke Pylon side Wing side	Shackles	Fail-safe bolts	Sleeves
Superficial wear	Repair as per manufacturer's instructions	Refer to manufacturer's instructions	Replace	Replace
Deformation	Repair as per manufacturer's instructions	Replace	Replace	Replace
Corrosion	Repair as per manufacturer's instructions			Replace
Structural defects	Repair as per manufacturer's instructions	Replace	Replace	Replace
Bore deformation	Replace bushes	Replace bushes		Replace
Wear on bore	Replace bushes	Replace bushes		Replace

Inspection of Pylon-to-Wing Aft Attach Fitting
Table 601

NOTE : In case of wear being evidenced on sleeves and/or shackles, it is mandatory to check forward attach fittings for condition (Ref. 54-51-72, P. Block 601).

(3)Close-up
(a)Install aft attach fitting (Ref. 54-51-75, P. Block 401).

2. Dimensional Checks of Aft Attach Fitting

A. Reason for the Job
(1)Check of fits and clearances after removal of pylon.

B. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedures	
- 54-51-75, P. Block 401	Aft Attach Fitting (RIB 18)
- 54-51-75, P. Block 801	Aft Attach Fitting (RIB 18)

C. Procedure
(1)Job set-up
(a)Remove aft attach fitting (Ref. 54-51-75, P. Block 401).
(2)Inspection
(a)Check the following conditions :
(Ref. Fig. 601)
NOTE : When wear limits are exceeded, replace bushes (Ref. 54-51-75, P. Block 801).
CAUTION : NO WEAR, DISTORTION OR STRUCTURAL DEFECT OF BOLT AND BUSH STEEL OR PLATING IS ALLOWED. DISCARD BOLT OR BUSH AS NECESSARY.
1 For aft attach fitting - lower bushes

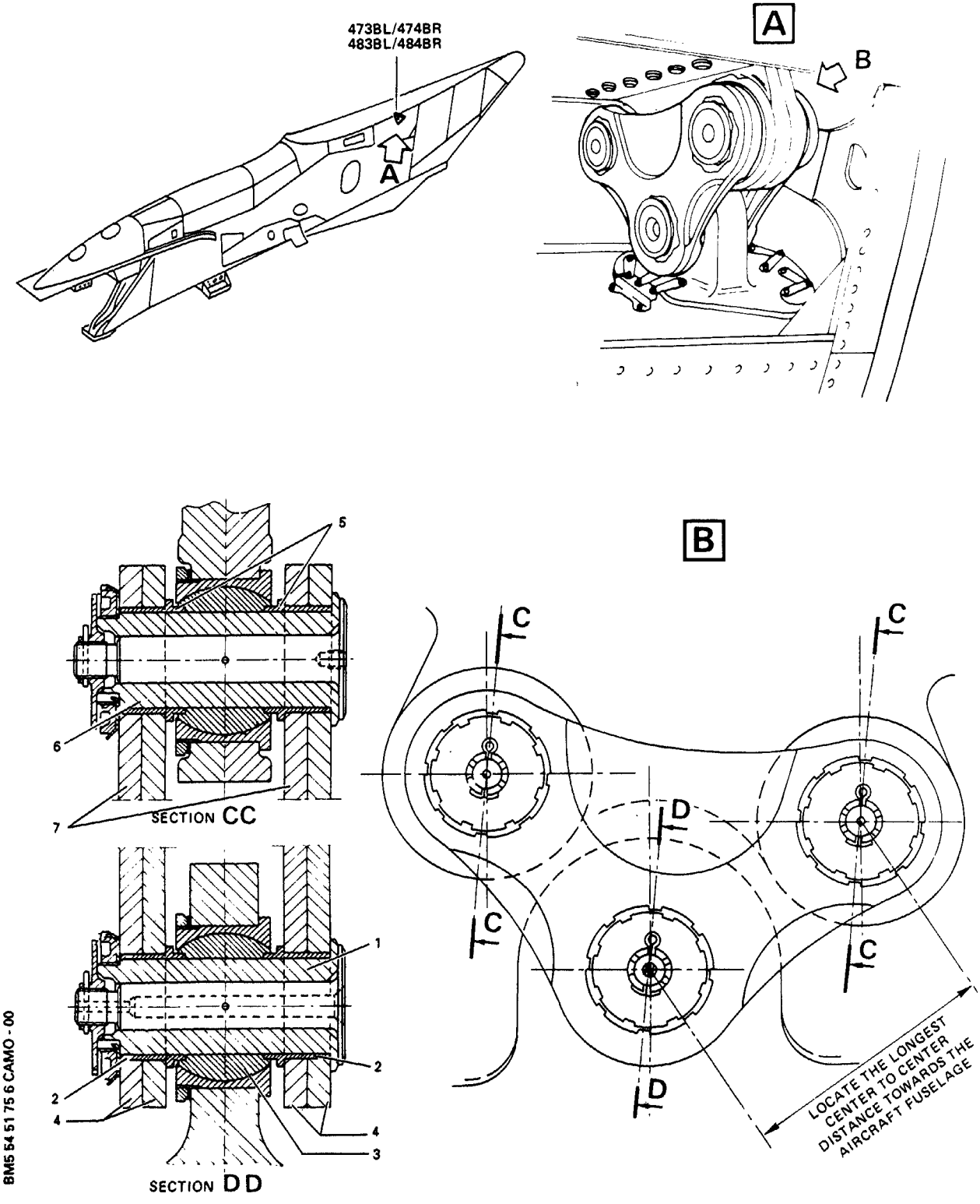
Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
D							
OD1	2.3611 (59.971)	2.3618 (59.990)			2.3602 (59.951)		
			0.0004 (0.010)	0.0023 (0.059)			0.0047 (0.12)
ID2	2.3622 (60.000)	2.3634 (60.030)				2.3649 (60.070)	
OD1	2.3611 (59.971)	2.3618 (59.990)					
			0.0004	0.0023			0.0047

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
			(0.010)	(0.059)			(0.12)
ID3	2.3622 (60.000)	2.3634 (60.030)					
OD2	2.6008 (66.059)	2.6015 (66.078)	-0.0030 (-0.078)	-0.0011 (-0.029)	2.6003 (66.049)		0.00
ID4	2.5984 (66.000)	2.5996 (66.030)				2.6003 (66.050)	

2 For aft attach fitting - upper bushes

Detail and Item No.	Original Mfg Limits: Dimension Inches (Millimeters) Min.	Original Mfg Limits: Dimension Inches (Millimeters) Max.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Min.	Original Mfg Limits: Assy. Clearance Inches (Millimeters) Max.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Min.	In-Service Wear Limits: Dimension Limits Inches (Millimeters) Max.	In-Service Wear Limits: Max. Allow. Clear in. (mm)
C							
OD6	1.9674 (49.971)	1.9681 (49.990)			1.9665 (49.951)		
			0.0004 (0.010)	0.0023 (0.059)			0.0047 (0.12)
ID5	1.9685 (50.000)	1.9697 (50.030)				1.9712 (50.070)	
OD5	2.2068 (56.053)	2.2076 (56.072)	-0.0028 (-0.072)	-0.0009 (-0.023)	2.2064 (56.045)		0.00
ID7	2.2047 (56.000)	2.2059 (56.030)				2.2065 (56.046)	

(3)Close-up
(a)Install aft attach fitting (Ref. 54-51-75, P. Block 401).



Aft Attach Fitting
Figure 601

1. Replacement of the Bushes of the Shackles at RIB18

R **WARNING : SPECIFIC ENVIRONMENTAL CONTROL AND EQUIPMENT IS REQUIRED WHEN**
R **PERFORMING GRINDING/SANDING/HONING OPERATIONS ON THESE BUSHES,**
R **AS THEY CONTAIN COPPER BERYLLIUM, AND MAY GENERATE TOXIC**
R **BERYLLIUM DUST.**

A. Equipment and Materials

ITEM	DESIGNATION
(1)Material No. 08-029	Bonding and Adhesive Compounds (Ref. 20-31-00)
(2)Material No. 11-003	Common Greases (Ref. 20-31-00)
Referenced Procedure - 54-51-75, P. Block 401	Aft Attach Fitting (RIB18)

B. Job Set-Up

(1)Remove the shackle at RIB18 (Ref. 54-51-75, P. Block 401).

C. Procedure

R (Ref. Fig. 801)

(1)Remove the bushes (2) and (3) from the shackles (1).
(2)Clean the shackle (1) with Material No. 11-003.
(3)Visually inspect the shackle bores. Make sure that there is no damage.
(4)Measure the diameters D1 and D2 of the shackle bores and make sure that the diameters D1 and D2 are in Table 801 :

DIAMETER	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
D1	56 (2.2047)	H7 : + 0.030 (+ 0.00118) + 0 (+ 0)
D2	66 (2.5984)	H7 : + 0.030 (+ 0.00118) + 0 (+ 0)

Table 801
Correct Diameters D1 and D2 of Bushes at RIB18

(a)If the diameter D1 and/or D2 are not in the tolerance, bore shackle (1) to repair size diameters given in table 802 :

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)		TOLERANCE IN MM (IN.)
	Diameter D1	Diameter D2	
R1	56.2 (2.2125)	66.2 (2.6062)	H7 : + 0.030 (+0.00118) + 0 (+0)

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)		TOLERANCE IN MM (IN.)
	Diameter D1	Diameter D2	
R2	56.4 (2.2204)	66.4 (2.6141)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	56.6 (2.2283)	66.6 (2.6220)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	56.8 (2.2362)	66.8 (2.6299)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	57 (2.2440)	67 (2.6377)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	57.4 (2.2598)	67.4 (2.6535)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	57.9 (2.2795)	67.9 (2.6732)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	58.4 (2.2992)	68.4 (2.6929)	H7 : + 0.030 (+0.00118) + 0 (+0)

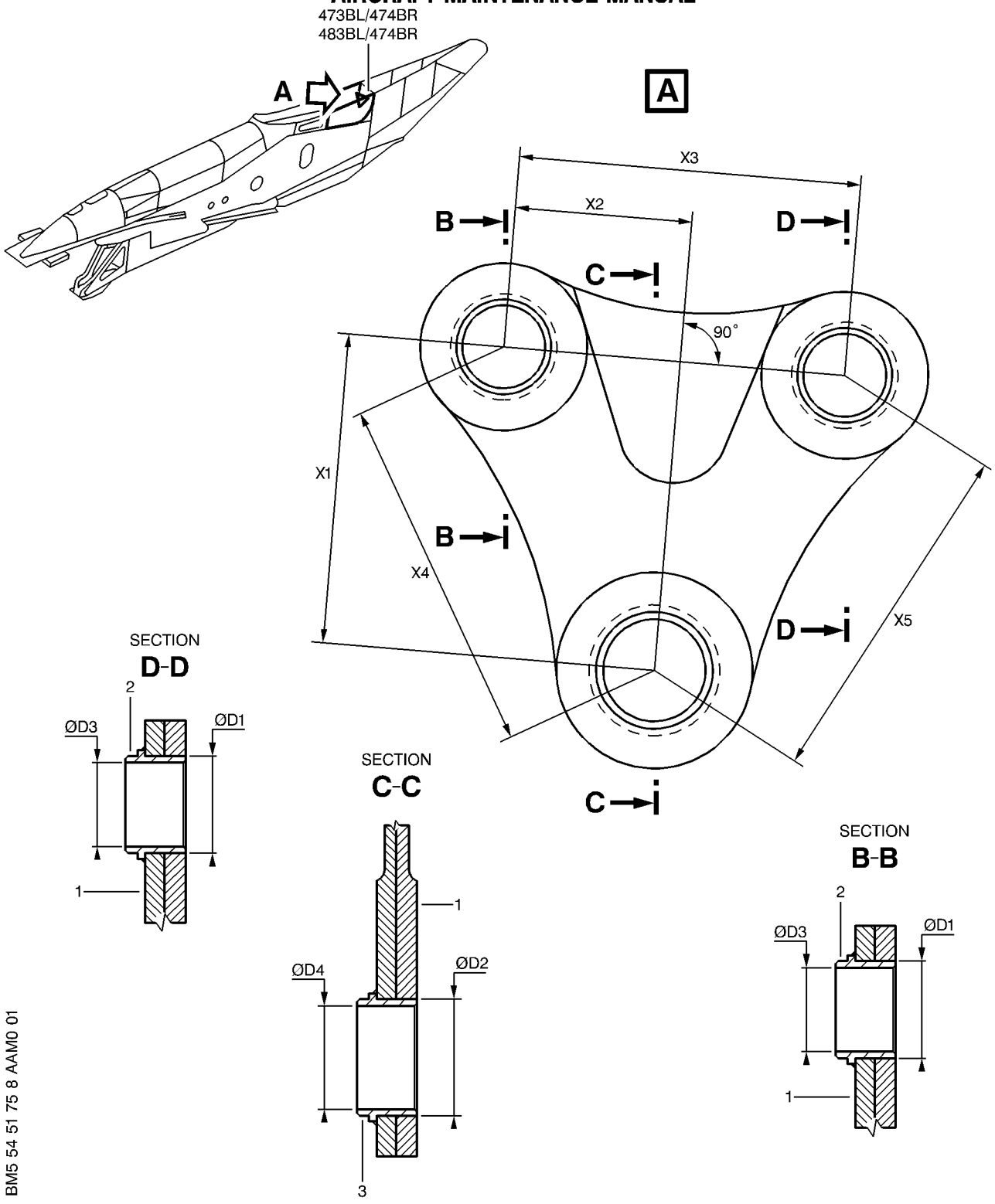
Table 802
Repair Sizes of Attach Fittings at RIB18

(5) Quench the new bushes (2) and (3) in the liquid nitrogen and install bushes (2) and (3) in the shackle (1) with Material No. 08-029.

(6) Rebore the bushes (2) and (3) to the diameter D3 and D4 given in the Table 803 observing the center-to-center distances X1 to X5 given on the Table 804.

DIAMETER	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
D3	50 mm (1.9685)	H7 : + 0.025 (+ 0.00098) + 0 (+ 0)
D4	60 mm (2.3622)	H7 : + 0.03 (+ 0.00118) + 0 (+ 0)

Table 803
Boring the New Bushes to Diameters D3 and D4 of the Shackles at RIB18



Reboring of Bushes at RIB18
Figure 801

Center-to-center distance	NOMINAL VALUE IN MM (IN.)	TOLERANCE IN MM (IN.)
X1	179.63 (7.0720)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X2	108.41 (4.2681)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X3	216.82 (8.5362)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X4	209.81 (8.2602)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X5	209.81 (8.2602)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)

Table 804
Center-to-Center Distance of Shackles at RIB18

(8)Clean the shackle (1) with Material No. 11-003.

D. Close-Up
(1)Install shackles at RIB18 (Ref. 54-51-75, P. Block 401).

AFT ATTACH FITTING (RIB18) - APPROVED REPAIRS

1. Replacement of the Bushes of the Shackles at RIB18

WARNING : SPECIFIC ENVIRONMENTAL CONTROL AND EQUIPMENT IS REQUIRED WHEN PERFORMING GRINDING/SANDING/HONING OPERATIONS ON THESE BUSHES, AS THEY CONTAIN COPPER BERYLLIUM, AND MAY GENERATE TOXIC BERYLLIUM DUST.

A. Equipment and Materials

ITEM	DESIGNATION
(1)Material No. 08-029	Bonding and Adhesive Compounds (Ref. 20-31-00)
(2)Material No. 11-003	Common Greases (Ref. 20-31-00)
Referenced Procedure - 54-51-75, P. Block 401	Aft Attach Fitting (RIB18)

B. Job Set-Up

(1)Remove the shackle at RIB18 (Ref. 54-51-75, P. Block 401).

C. Procedure

(Ref. Fig. 801)

(1)Remove the bushes (2) and (3) from the shackles (1).

(2)Clean the shackle (1) with Material No. 11-003.

(3)Visually inspect the shackle bores. Make sure that there is no damage.

(4)Measure the diameters D1 and D2 of the shackle bores and make sure that the diameters D1 and D2 are in Table 801 :

DIAMETER	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
D1	56 (2.2047)	H7 : + 0.030 (+ 0.00118) + 0 (+ 0)
D2	66 (2.5984)	H7 : + 0.030 (+ 0.00118) + 0 (+ 0)

Table 801
Correct Diameters D1 and D2 of Bushes at RIB18

(a)If the diameter D1 and/or D2 are not in the tolerance, bore shackle (1) to repair size diameters given in table 802 :

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)		TOLERANCE IN MM (IN.)
	Diameter D1	Diameter D2	
R1	56.2 (2.2125)	66.2 (2.6062)	H7 : + 0.030 (+0.00118) + 0 (+0)

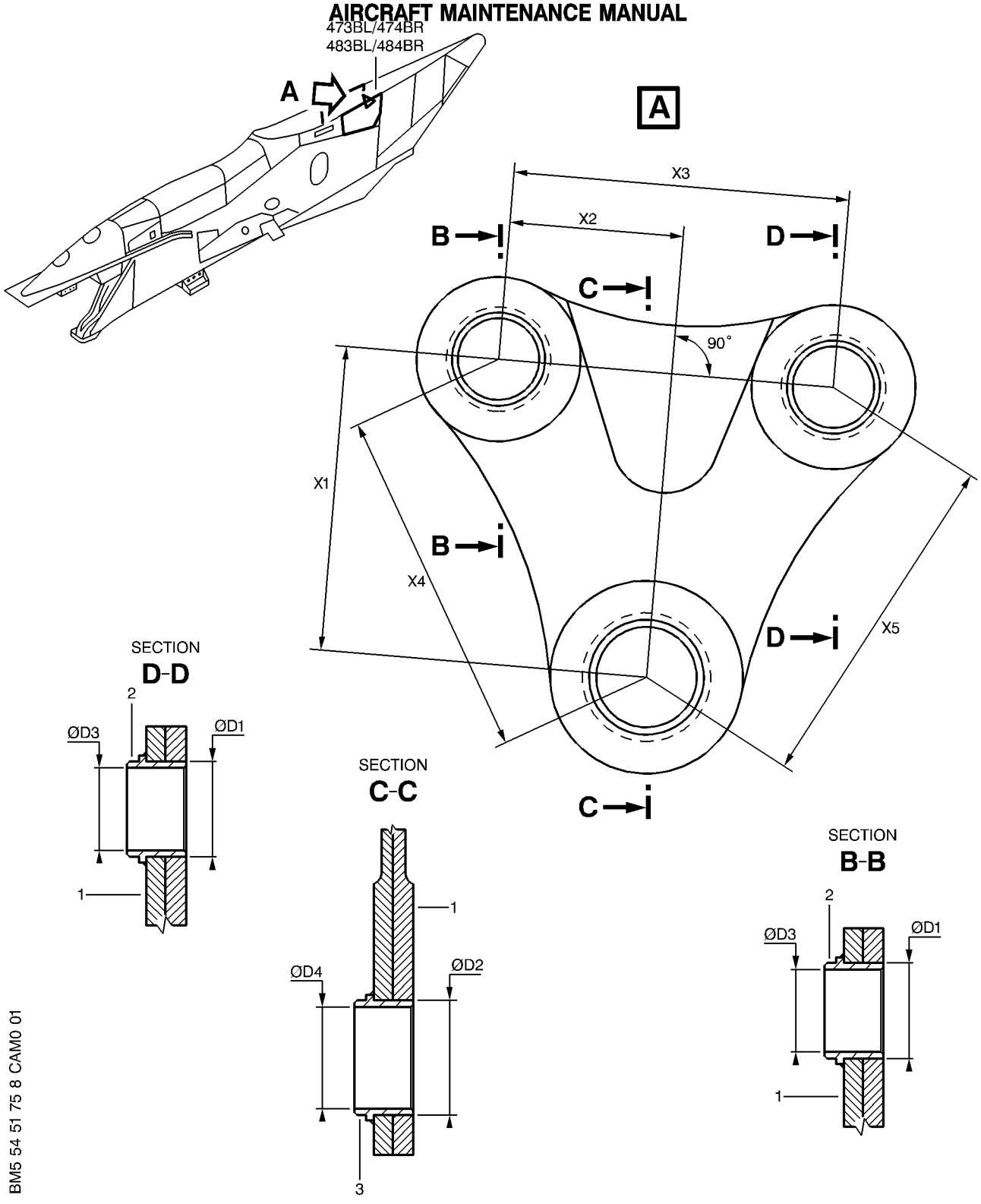
REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)		TOLERANCE IN MM (IN.)
	Diameter D1	Diameter D2	
R2	56.4 (2.2204)	66.4 (2.6141)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	56.6 (2.2283)	66.6 (2.6220)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	56.8 (2.2362)	66.8 (2.6299)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	57 (2.2440)	67 (2.6377)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	57.4 (2.2598)	67.4 (2.6535)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	57.9 (2.2795)	67.9 (2.6732)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	58.4 (2.2992)	68.4 (2.6929)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 802
Repair Sizes of Attach Fittings at RIB18

(5)Quench the new bushes (2) and (3) in the liquid nitrogen and install bushes (2) and (3) in the shackle (1) with Material No. 08-029.
(6)Rebore the bushes (2) and (3) to the diameter D3 and D4 given in the Table 803 observing the center-to-center distances X1 to X5 given on the Table 804.

DIAMETER	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
D3	50 mm (1.9685)	H7 : + 0.025 (+ 0.00098) + 0 (+ 0)
D4	60 mm (2.3622)	H7 : + 0.03 (+ 0.00118) + 0 (+ 0)

Table 803
Boring the New Bushes to Diameters D3 and D4 of the Shackles at RIB18



Reboring of Bushes at RIB18
Figure 801

Center-to-center distance	NOMINAL VALUE IN MM (IN.)	TOLERANCE IN MM (IN.)
X1	179.63 (7.0720)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X2	108.41 (4.2681)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X3	216.82 (8.5362)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X4	209.81 (8.2602)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X5	209.81 (8.2602)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)

Table 804
Center-to-Center Distance of Shackles at RIB18

(8)Clean the shackle (1) with Material No. 11-003.

D. Close-Up
(1)Install shackles at RIB18 (Ref. 54-51-75, P. Block 401).

1. Removal/Installation of the Spigot Ball Joint (Pylon on Aircraft)

A. Equipment and Materials

ITEM	DESIGNATION
(1)98A27503003000	Tool - Guard, Safety - Flap/Slat Control Lever
(2)98A54403011000	Removal/Installation Tool - Spigot Ball Joint
(3)98A54403011001	Spigot Ball Joint Removal Assy (Sub Assy of 98A54403011000)
(4)98A54403011002	Spigot Ball Joint Installation Assy (Sub Assy of 98A54403011000)
(5)Material No. 04-004	Common Greases (Ref. 20-31-00)
(6)Material No. 08-034	Loctite 672 (Ref. 20-31-00)
(7)Material No. 08-004	Bonding and Adhesive Compounds (Ref. 20-31-00)
(8)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedures	
- 26-21-15, P. Block 401	Fire Extinghuisher Bottle
- 54-00-00, P. Block 1	Nacelles/Pylons - General
- 57-41-28, P. Block 401	Pylon Spigot Sleeve
- 71-00-00, P. Block 401	Power Plant-General

B. Procedure

(1)Job set-up

(a)In flight compartment, on center pedestal, install tool 98A27503003000 on flap and slat control lever.

(b)Position access platforms.

(c)Remove the following fillets:

1 RH pylon : 481AL, 482AR

2 LH pylon : 471AL, 472AR

(d)Open access doors

1 RH pylon : 484AR

2 LH pylon : 473AL

(e)Remove fire extinguisher bottles (Ref. 26-21-15, P. Block 401).

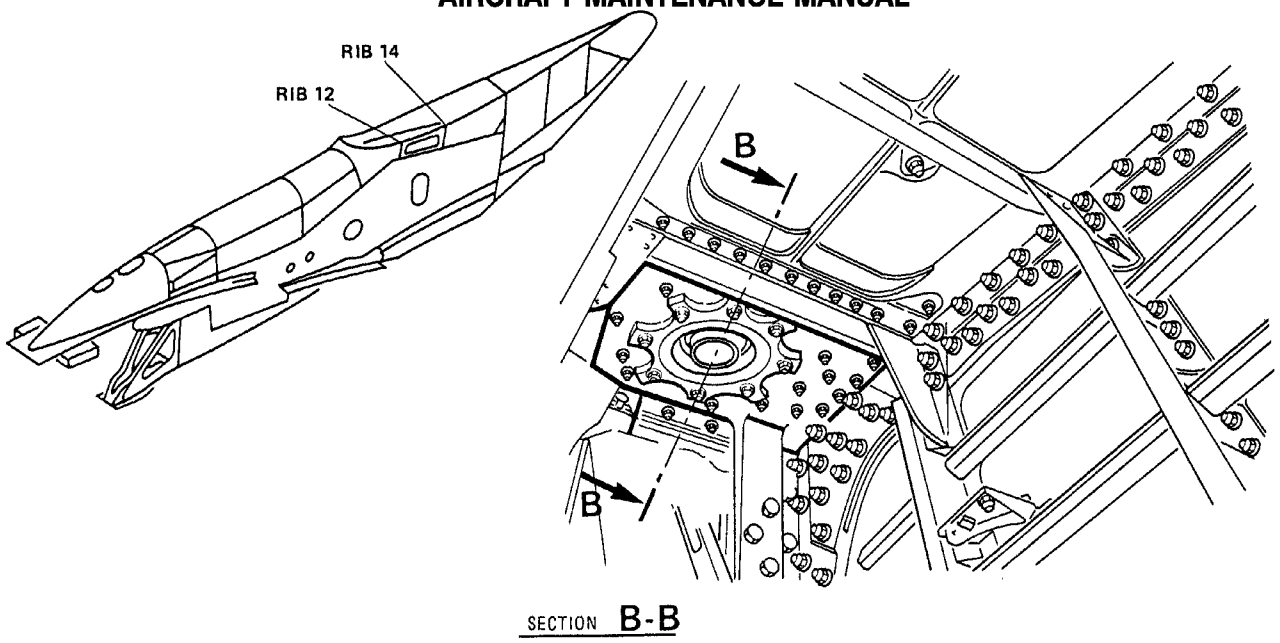
(2)Removal of ball-joint with spigot sleeve installed.
(Ref. Fig. 401)

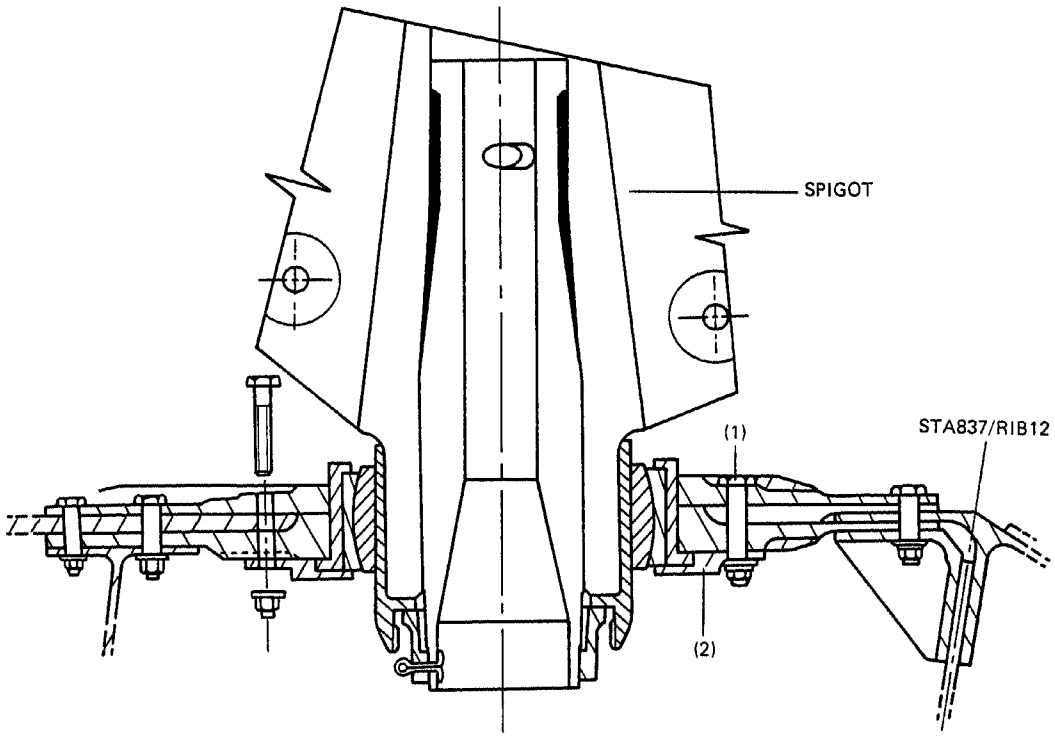
(a)On the upper panel between RIB12 and RIB14, remove Material No.08-004 protecting upper ball joint fitting.

(b)Remove and retain eight bolts (1) attaching flange (2) to lower ball joint fitting (Ref. Fig. 401).
Two of the eight bolts (1) attaching spigot ball joint retaining flange (2) cannot be removed via top of rear spar as they touch spigot fitting edge on wing side (Ref. Fig. 401).
Therefore, saw off these two bolt heads to remove them and install new bolts with heads downward.

(c)Secure tool 98A54403011001 (sub assy of 98A54403011000) under upper panel using two studs and nuts (3)
(Ref. Fig. 402).

(d)Between wing and upper panel, install two half shells (4) and (5)





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Spigot/Ball Joint Assembly
Figure 401

onto spigot and tighten bolts (6) and (7) (Ref. Fig. 402).
(e)Install threaded rods (8) and secure with nuts (9) in half shells (Ref. Fig. 402).
(f)Make certain that nut (10) is fully tightened and that jaws (11) are in open position (Ref. Fig. 403).
(g)Pressurize the actuating cylinder and position half shells (4) and (5) against upper panel.
(h)Untighten and remove threaded rods (8) (Ref. Fig. 402).
NOTE : If ball-joint extraction is difficult and leads to significant loads, remove spigot sleeve (Ref. 57-41-28, P. Block 401), then carry out the actions described in paragraph 1.B.(3).
(i)Remove half shells (4) and (5) (Ref. Fig. 402).
(j)Untighten nut (10) so that jaws (11) are in contact with ball joint.
R (k)Pressurize the actuating cylinder and extract spigot ball joint until
R it is possible to install half segments (12) and (13).
(l)Install two locating segments (12) and (13) between wing and pylon on the spigot, in the ball joint bore.
CAUTION : INSTALLATION OF THE LOCATING SEGMENTS IS MANDATORY OR SERIOUS DAMAGE TO THE PYLON COULD RESULT.
R (m)Depressurize the actuating cylinder and pull in the cylinder piston by approximately 40 mm (1.6 in.).
(n)Install shim (15) between sliding rod end and plate (14) (Ref. Fig. 403).
(p)Pressurize the actuating cylinder and remove completely the ball joint from its housing.
(q)Depressurize the actuating cylinder and remove shim (15).
(r)Remove tool 98A54403011001 (sub assy of 98A54403011000).
(s)Tighten nut (10) and free removed ball joint (Ref. Fig. 403).
(3)Removal of ball-joint with spigot sleeve removed.
(a)Remove engine (Ref. 71-00-00, P. Block 401).
(b)Remove positioning/centering half blocks installed over the ball-joint during spigot sleeve removal (Ref. 57-41-28, P. Block 401).
WARNING : FOR REMOVAL OF SPIGOT BALL-JOINT WITHOUT POSITIONING/ CENTERING HALF BLOCKS INSTALLED OVER THE BALL-JOINT, ENGINE MUST BE REMOVED IN ORDER TO AVOID UNDESIRABLE HORIZONTAL LOADS ON SPIGOT.
(c)Apply paragraph 1.B.(2).
(4)Preparation of replacement component
(a)Check ball joint visually.
(b)Check spigot.
(c)Apply Material No. 04-004 on the spigot surface in contact with the spigot ball joint.
(d)Coat ball joint housing and spigot with Material No. 08-034.
(e)Coat ball joint with Material No. 08-034.
(5)Installation
(a)Install ball joint with tool 98A54403011002 (sub assy of 98A54403011000).
NOTE : If spigot sleeve has been removed, install it, first (Ref. 57-41-28, P. Block 401). Then carry out the actions below :
1 Install threaded rods (16) with nuts (17) under upper panel.

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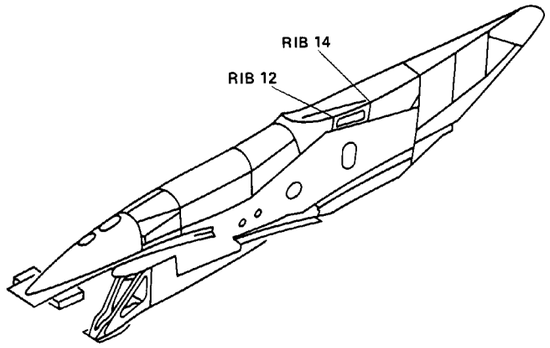
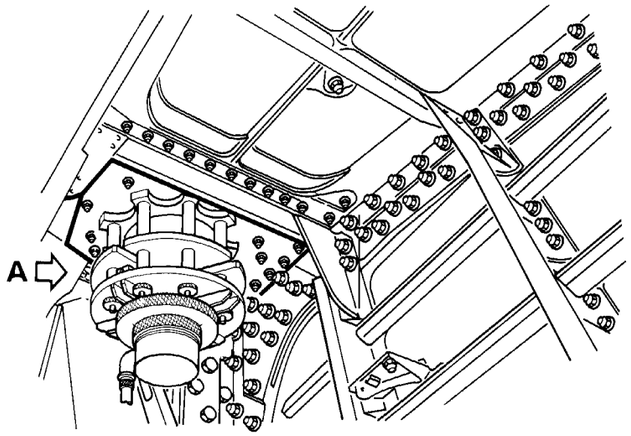
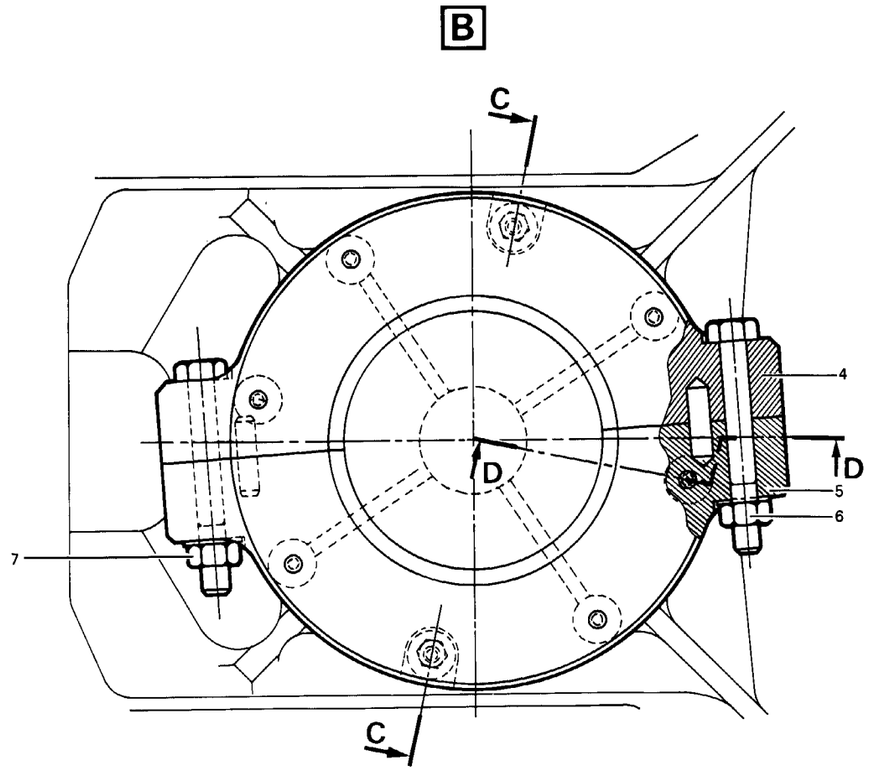
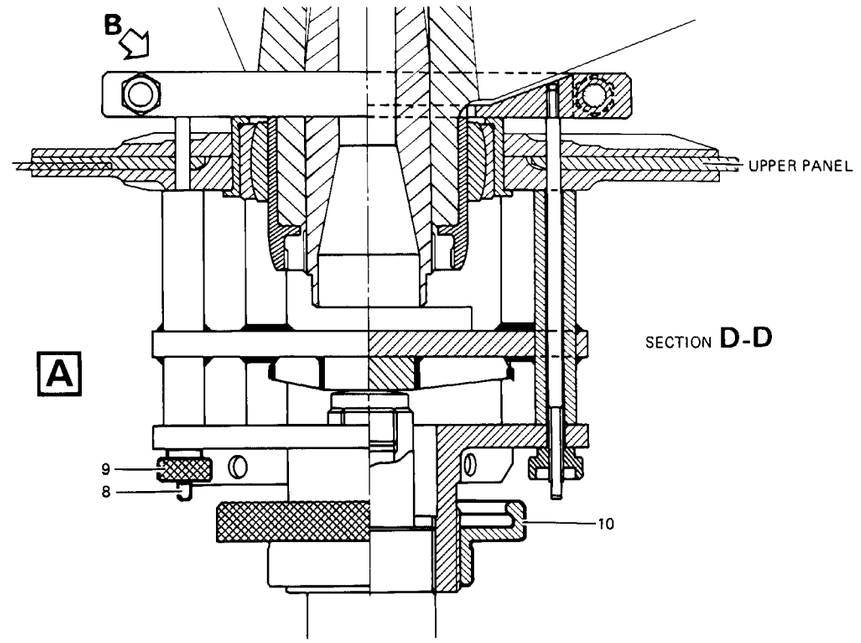
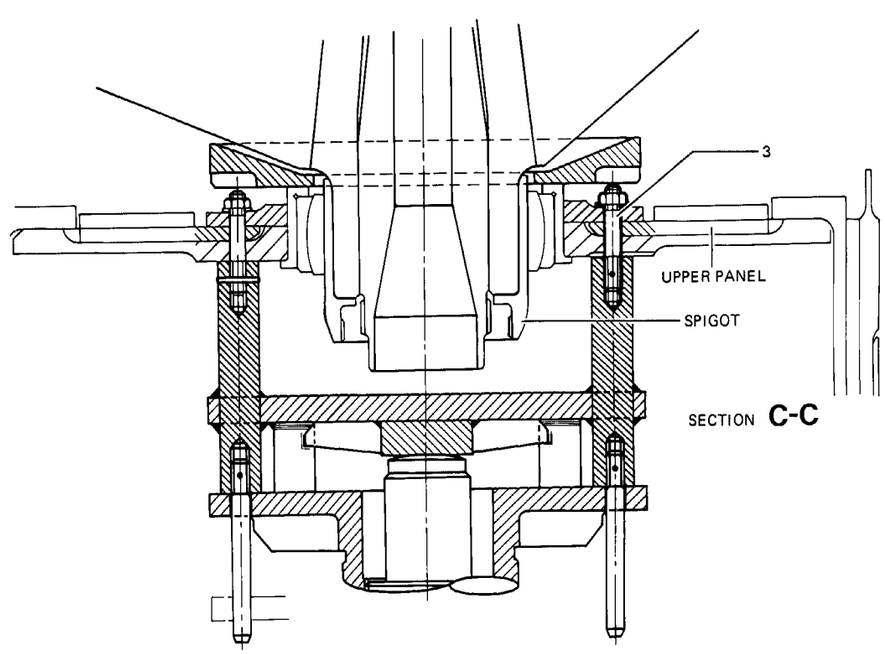


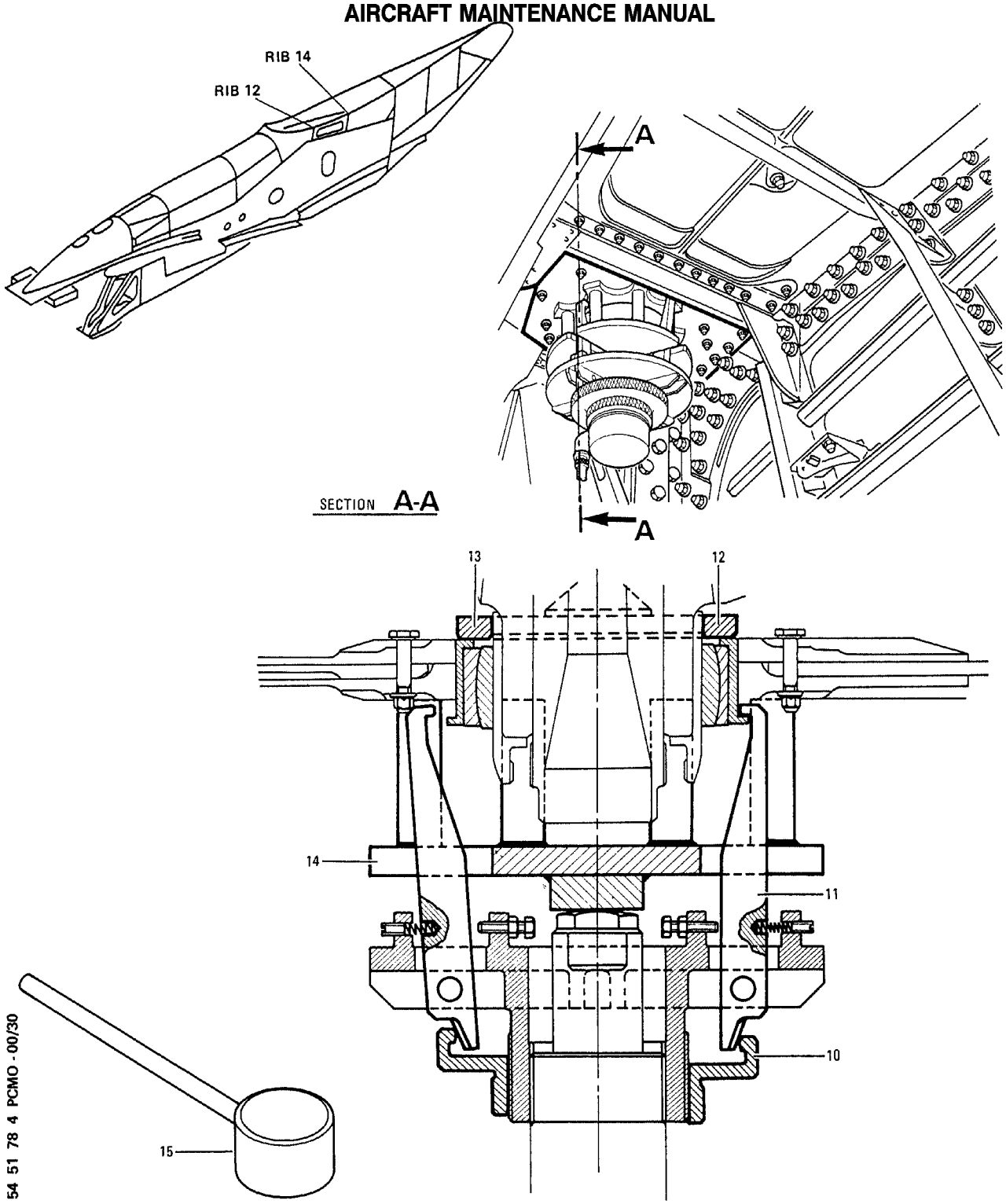








Ball Joint Removal - First Step
Figure 402



Ball Joint Removal - Second Step
Figure 403

Tighten nuts (18) to hold in place threaded rods (Ref. Fig. 404).
2 Insert gently ball joint into housing.
3 Install plate (19) on threaded rods and screw nuts (20).
4 Install completely ball joint while progressively tightening nuts (20) and recover half segments (12) and (13) (Ref. Fig. 404).
5 Remove tool 98A54403011002 (sub assy of 98A54403011000).
6 Perfom a seal with Material No.08-004 between the upper panel and the lower section of the ball joint (Ref. Fig. 405).

(b)Install flange (2) on lower ball joint fitting using eight bolts (1). If two of the bolts (1) have been sawn off during removal, install new bolts with heads downward (Ref. Fig. 401).
(c)Between upper panel and wing apply Material No. 08-004 to protect upper ball joint fitting (Ref. 54-00-00, P. Block 1) (Ref. Fig. 405).
(d)If engine has been removed, install it (Ref. 71-00-00, P. Block 401).

(6)Close-up
(a)Install fire extinguisher bottles (Ref. 26-21-11, P. Block 401).
(b)Install panels
1 RH pylon : 481AL, 482AR
2 LH pylon : 471AL, 472AR
(c)Close access doors
1 RH pylon : 484AR
2 LH pylon : 473AL
(d)Remove access platforms.
(e)In flight compartment on center pedestal remove tool 98A27503003000.

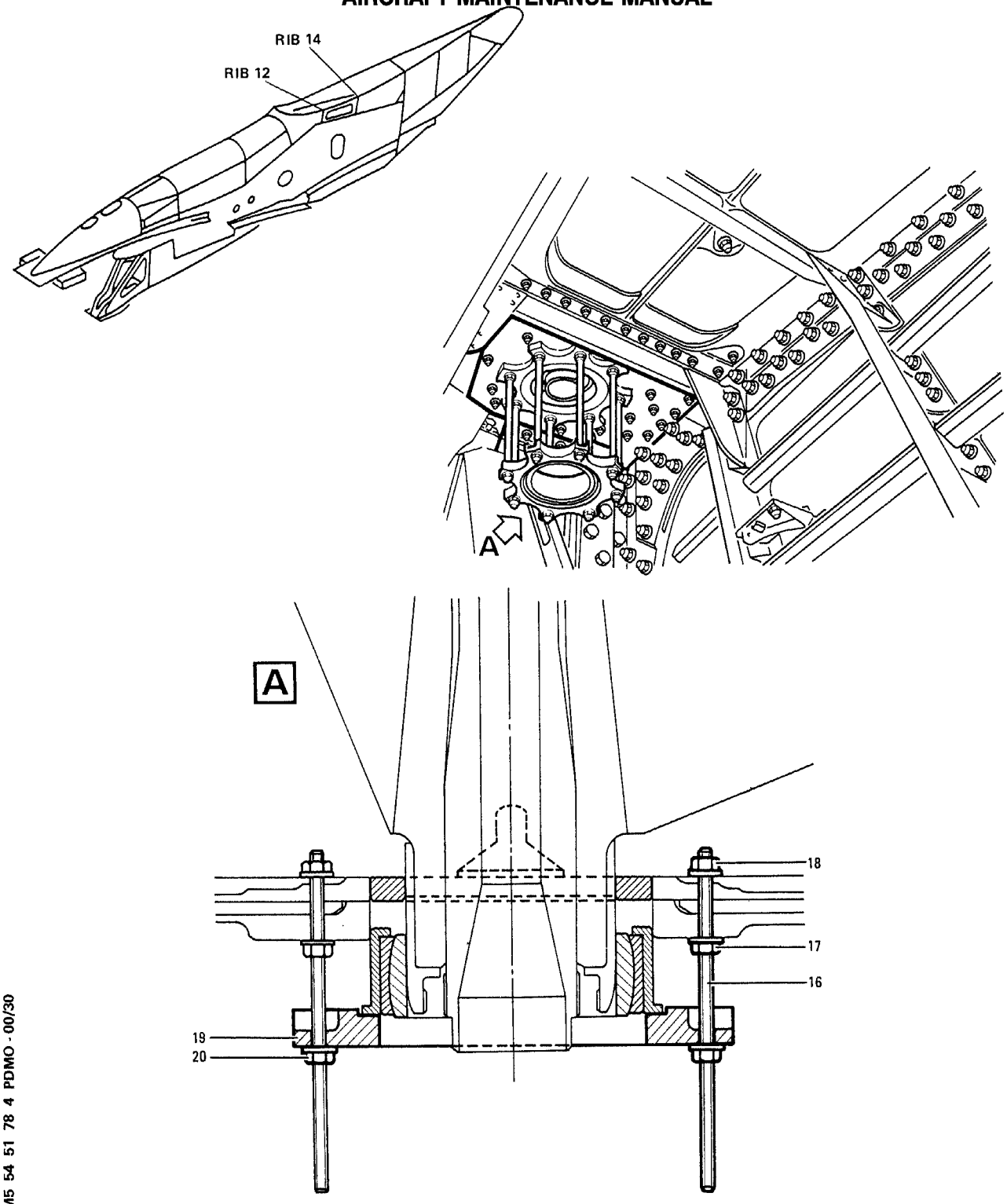
1. Removal/Installation of the Spigot Ball Joint (Pylon Removed)

A. Equipment and Materials

ITEM	DESIGNATION
(1)98A54403028000	Spigot Ball Joint - Removal Tool (Pylon Removed)
(2)Material No. 08-034	Bonding and Adhesive Compounds (Ref. 20-31-00)
(3)Material No. 08-004	Bonding and Adhesive Compounds (Ref. 20-31-00)
(4)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedures	
- 26-21-15, P. Block 401	Fire Extinghuisher Bottle
- 54-50-00, P. Block 401	Pylon Removal/Installation

B. Job Set-Up
(1)Remove the pylon (Ref. 54-50-00, P. Block 401).
(2)Make sure that these access doors are open.
(a)For the right pylon : 484AR
(b)For the left pylon : 473AL
(3)Make sure that the fire extinguisher bottles are removed (Ref. 26-21-15, P. Block 401).

C. Procedure
(Ref. Fig. 406)
(Ref. Fig. 407)
(1)Removal of the spigot ball joint (33).



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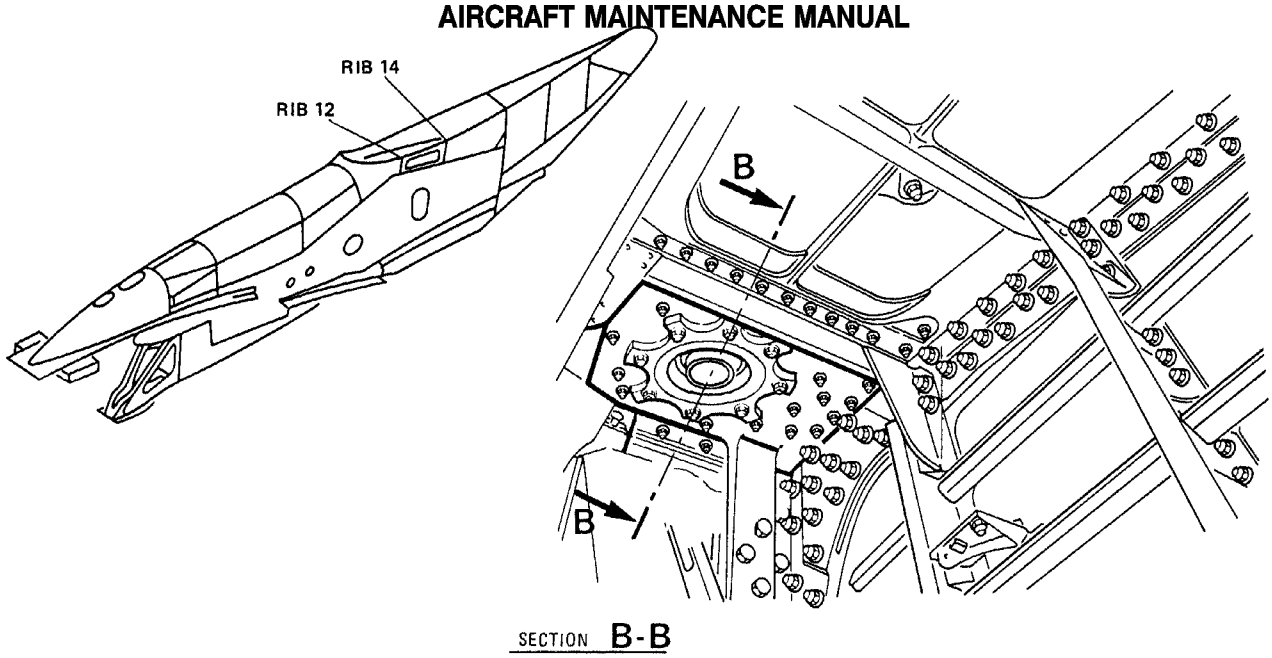
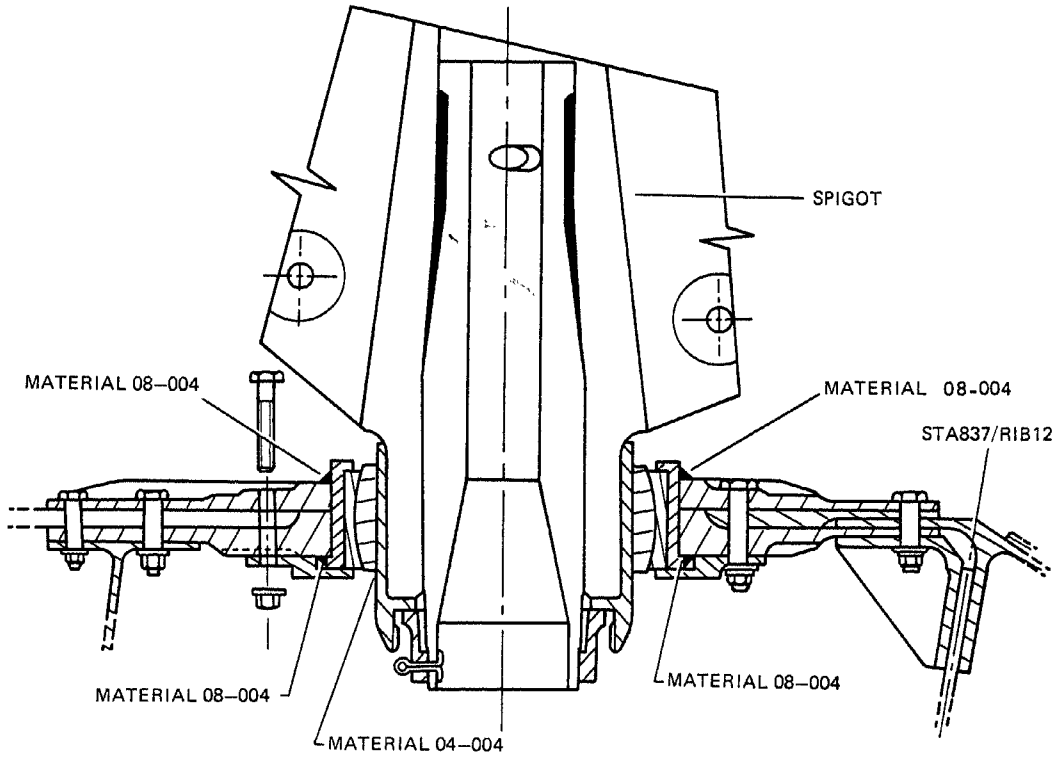
Ball Joint Installation
Figure 404





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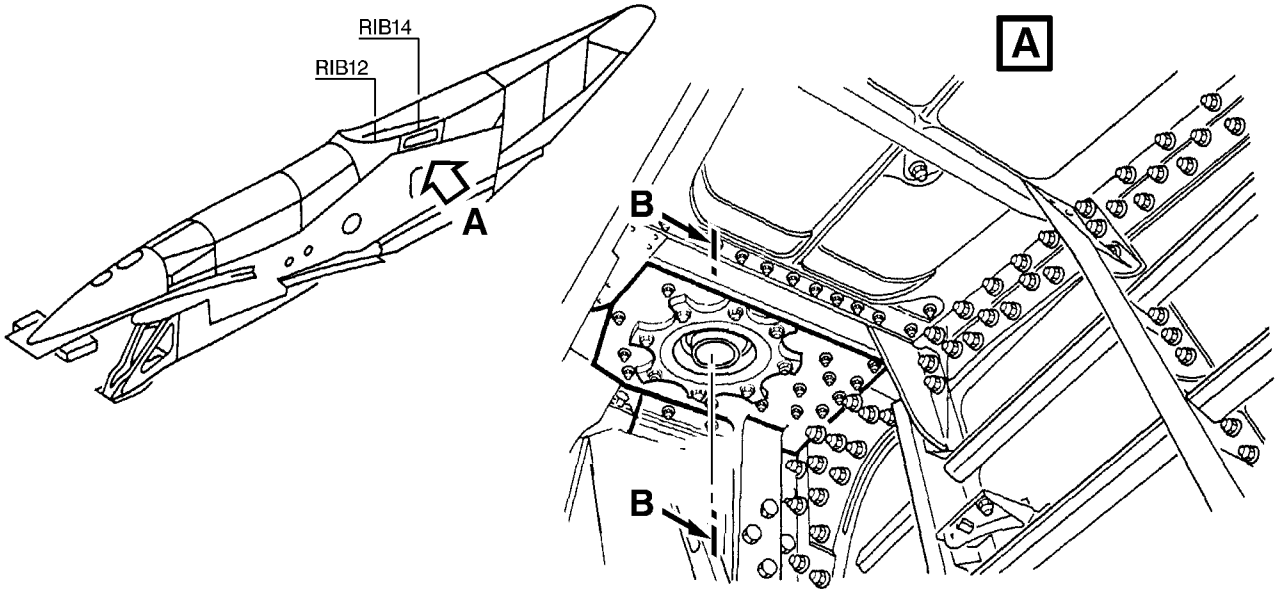
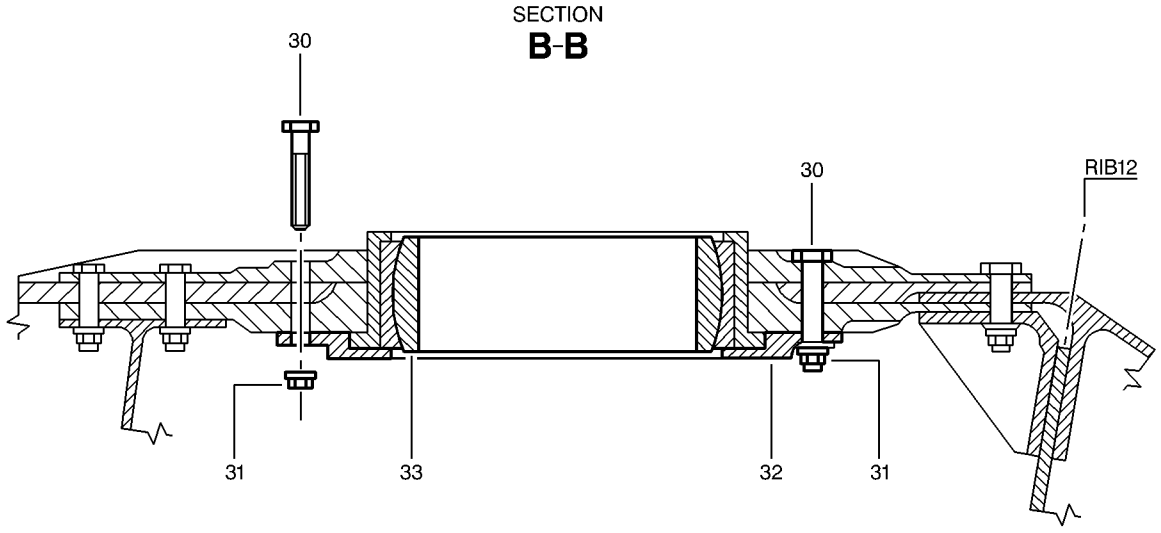
Ball Joint Installation - Protection Against Corrosion
Figure 405





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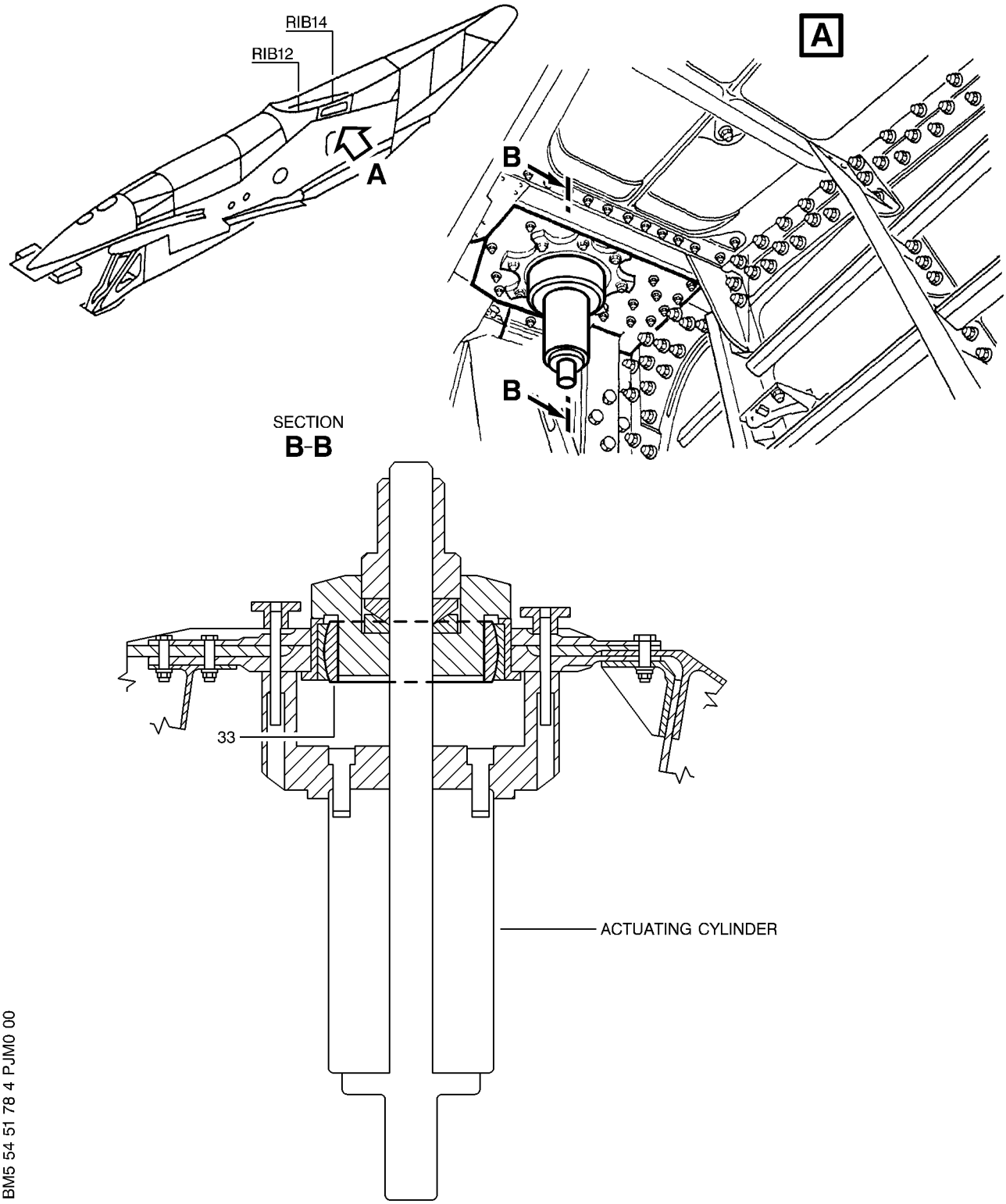
Spigot/Ball Joint Assembly (Pylon Removed)
Figure 406



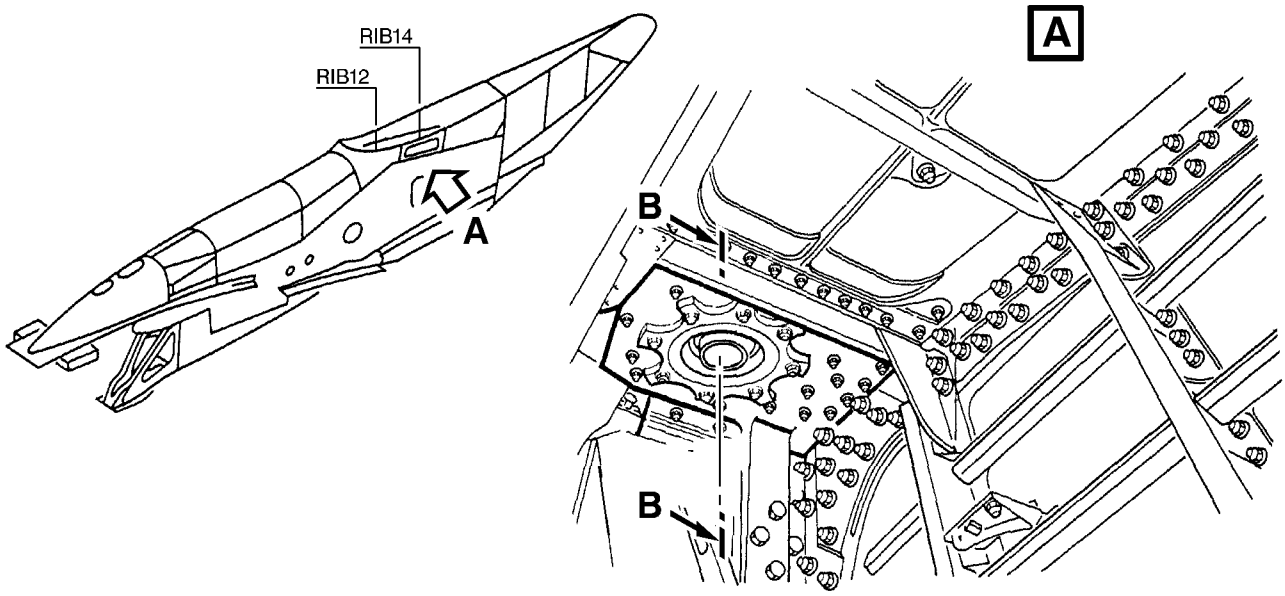
Spigot/Ball Joint Assembly (Pylon Removed)
Figure 407

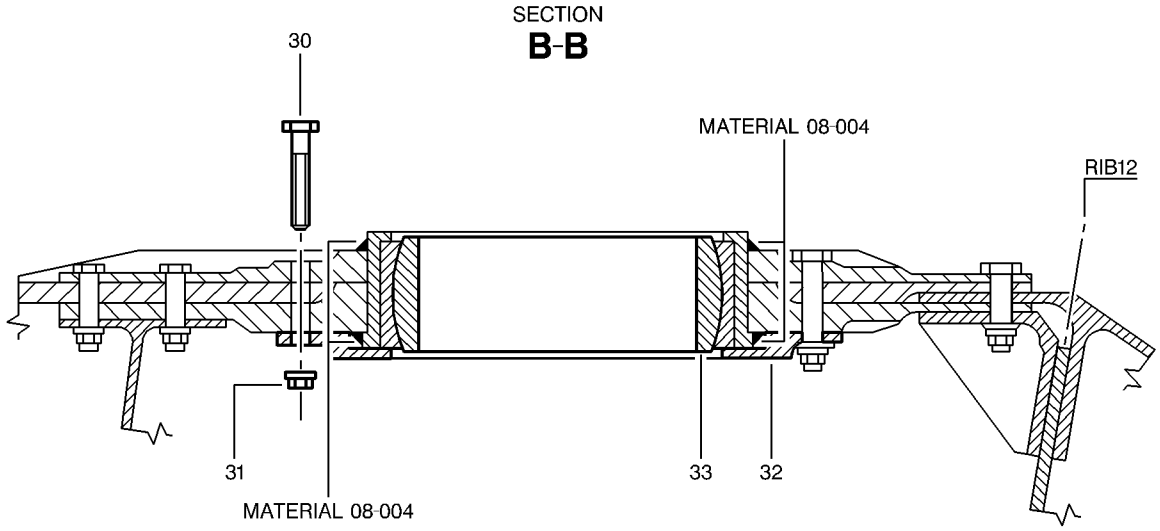
(a)On the upper panel, between RIB12 and RIB14, remove the adhesive compound from the upper ball joint fitting.
(b)Remove the nuts (31), the bolts (30) and the flange (32).
(c)Put the tool 98A54403028000 in position under the upper panel.
(d)Pressurize the actuating cylinder of the tool and remove the spigot ball joint (33).
(e)Clean the housing of the spigot ball joint (33) with cleaning agent, Material No. 11-003.

(2)Preparation for replacement
(a)Do a visual check of the spigot ball joint (33).
(b)Apply Material No. 08-034 on the spigot ball joint housing.
(c)Apply Material No. 08-034 on the spigot ball joint (33). (Ref. Fig. 408)

(3)Installation of the spigot ball joint (33).
(a)Install the spigot ball joint (33).
(b)Install the flange (32), the bolts (30) and the nuts (31) and tighten them.
(c)Apply Material No. 08-004 on the spigot ball joint (33).

D. Close-Up
(1)Install the pylon (Ref. 54-50-00, P. Block 401).





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Spigot Ball Joint - Protection Against Corrosion
Figure 408

1. Removal/Installation of the Spigot Ball Joint (Pylon on Aircraft)

A. Equipment and Materials

ITEM	DESIGNATION
(1)98A27503003000	Tool - Guard, Safety - Flap/Slat Control Lever
(2)98A54403011000	Removal/Installation Tool - Spigot Ball Joint
(3)98A54403011001	Spigot Ball Joint Removal Assy (Sub Assy of 98A54403011000)
(4)98A54403011002	Spigot Ball Joint Installation Assy (Sub Assy of 98A54403011000)
(5)Material No. 04-004	Common Greases (Ref. 20-31-00)
(6)Material No. 08-034	Bonding and Adhesive Compounds (Ref. 20-31-00)
(7)Material No. 08-004	Bonding and Adhesive Compounds (Ref. 20-31-00)
(8)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedures	
- 26-21-15, P. Block 401	Fire Extinghuisher Bottle
- 57-41-28, P. Block 401	Pylon Spigot Sleeve
- 71-00-00, P. Block 401	Power Plant-General

B. Procedure

(1)Job Set-Up

(a)In flight compartment, on center pedestal, install tool 98A27503003000 on flap and slat control lever

(b)Position access platforms

(c)Remove the following fillets:

1 RH pylon : 481AL, 482AR, 481BL, 482BR

2 LH pylon : 471AL, 472AR, 471BL, 472BR

(d)Open access doors

1 RH pylon : 484AR, 483AL

2 LH pylon : 474AR, 473AL

(e)Remove fire extinguisher bottles (Ref. 26-21-15 P. Block 401)

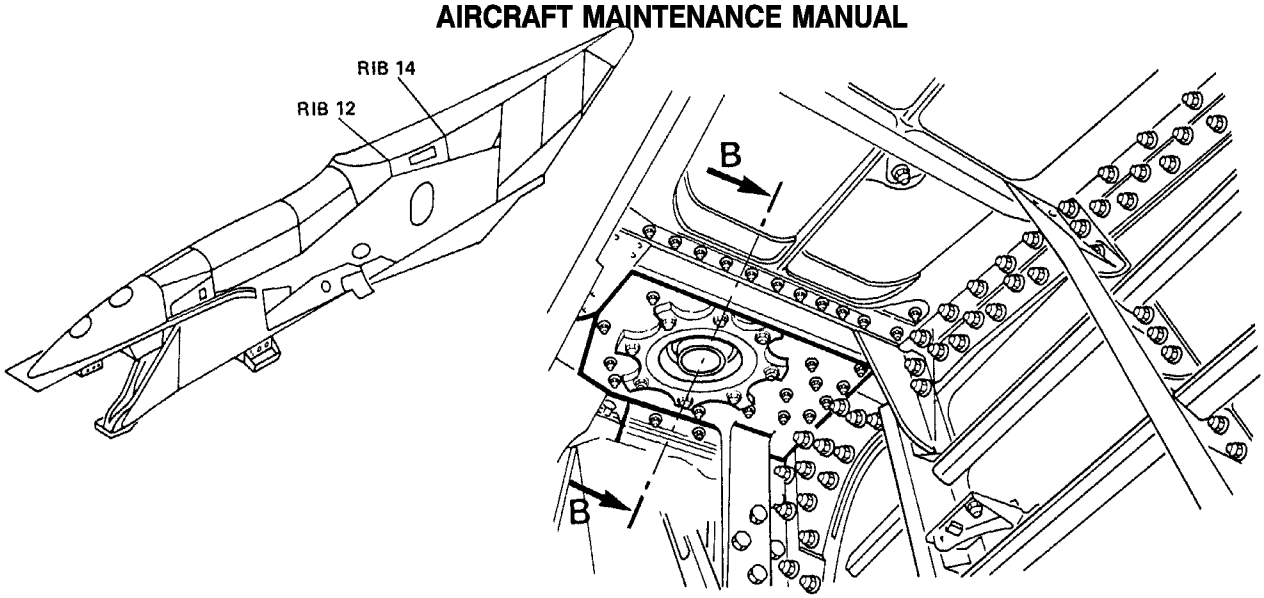
(2)Removal of ball-joint with spigot sleeve installed.
(Ref. Fig. 401)

(a)On the upper panel between RIB12 and RIB14, remove Material No.08-004 protecting upper ball joint fitting.

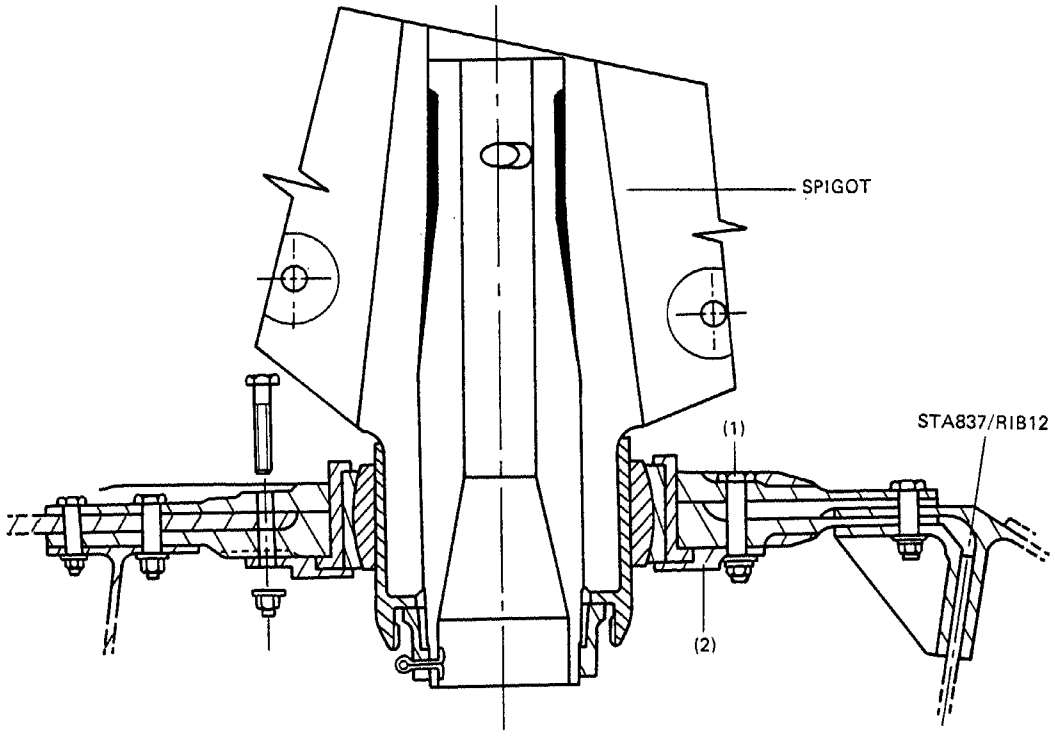
(b)Remove and retain eight bolts (1) attaching flange (2) to lower ball joint fitting.
Two of the eight bolts (1) attaching spigot ball joint retaining flange (2) cannot be removed via top of rear spar as they touch spigot fitting edge on wing side.
Therefore, saw off these two bolt heads to remove them and install new bolts with heads downward.

(c)Secure tool 98A54403011001 (sub assy of 98A54403011000) under upper panel using two studs and nuts (3).

(d)Between wing and upper panel, install two half shells (4) and (5) onto spigot and tighten bolts (6) and (7).



SECTION B-B



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Spigot/Ball Joint Assembly
Figure 401

(e)Install six threaded rods (8) in half shells and tighten nuts (9)
(f)Make certain that nut (10) is fully tightened and that jaws (11) are in open position.
(Ref. Fig. 402)
(Ref. Fig. 403)
(g)Pressurize the actuating cylinder and start extracting spigot ball joint until half shells (4) and (5) come into contact with upper panel.
(h)Untighten and remove threaded rods (8).
NOTE : If ball-joint extraction is difficult and leads to significant loads, remove spigot sleeve (Ref. 57-41-28, P. Block 401), then carry out the actions described in paragraph 1.B.(3).
(i)Remove half shells (4) and (5).
(j)Untighten nut (10) so that jaws (11) are in contact with ball joint.
(k)Pressurize the actuating cylinder and extract spigot ball joint until it is possible to install half segments (12) and (13).
R (l)Install two locating segments (12) and (13) between wing and pylon on the spigot, in the ball joint bore
R CAUTION : INSTALLATION OF THE LOCATING SEGMENTS IS MANDATORY OR SERIOUS DAMAGE TO THE PYLON COULD RESULT.
(m)Depressurize the actuating cylinder and pull in the cylinder piston by approximately 40 mm (1.6 in.).
(n)Install shim (15) between cylinder piston end and plate (14)
(p)Pressurize the actuating cylinder and remove completely the ball joint from its housing.
(q)Depressurize the actuating cylinder and remove shim (15).
(r)Remove tool 98A54403011001 (sub assy of 98A54403011000).
(s)Tighten nut (10) and free removed ball joint.
(3)Removal of ball-joint with spigot sleeve removed.
(a)Remove engine (Ref. 71-00-00, P. Block 401).
(b)Remove positioning/centering half blocks installed over the ball-joint during spigot sleeve removal (Ref. 57-41-28, P. Block 401).
WARNING : FOR REMOVAL OF SPIGOT BALL-JOINT WITHOUT POSITIONING/ CENTERING HALF BLOCKS INSTALLED OVER THE BALL-JOINT, ENGINE MUST BE REMOVED IN ORDER TO AVOID UNDESIRABLE HORIZONTAL LOADS ON SPIGOT.
(c)Apply paragraph 1.B.(2).
(4)Preparation of replacement component
(a)Visually inspect spigot ball joint and receptacle fitting.
(b)Check spigot
(c)Apply Material No. 04-004 on the spigot surface in contact with the spigot ball joint.
(d)Coat ball joint housing and spigot with Material No. 08-034.
(e)Coat ball joint with Material No. 08-034.
(5)Installation
(a)Install ball joint with tool 98A54403011002 (sub assy of 98A54403011000).
NOTE : If spigot sleeve has been removed, install it, first (Ref. 57-41-28, P. Block 401). Then carry out the actions below :
1 Install threaded rods (16) with nuts (17) under upper panel. Tighten nuts (18) to hold in place threaded rods.

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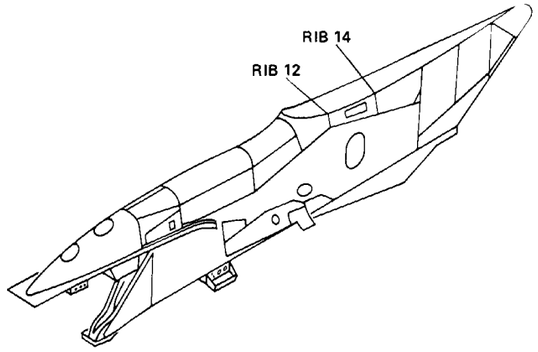
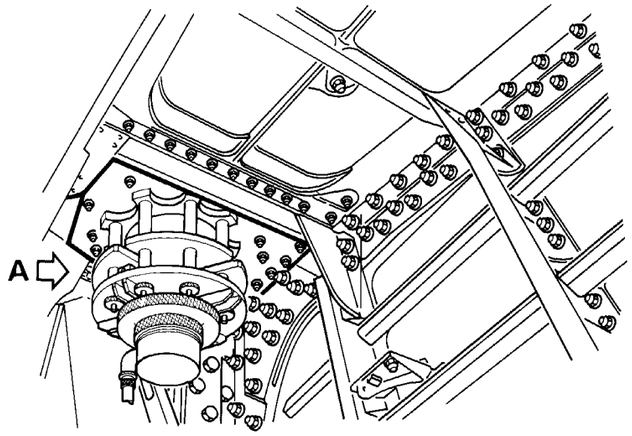
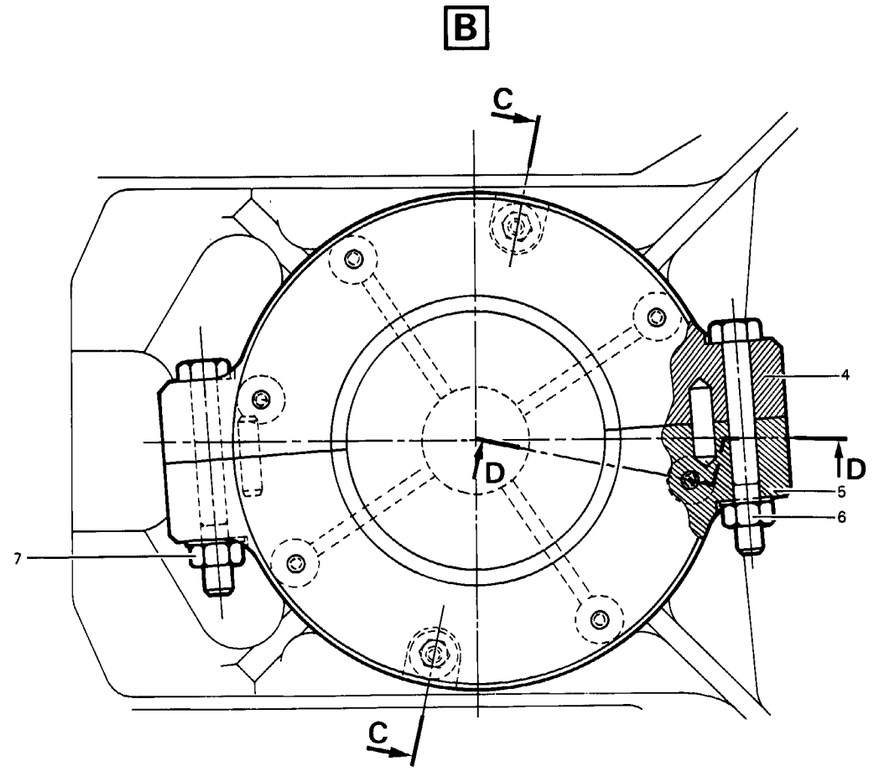
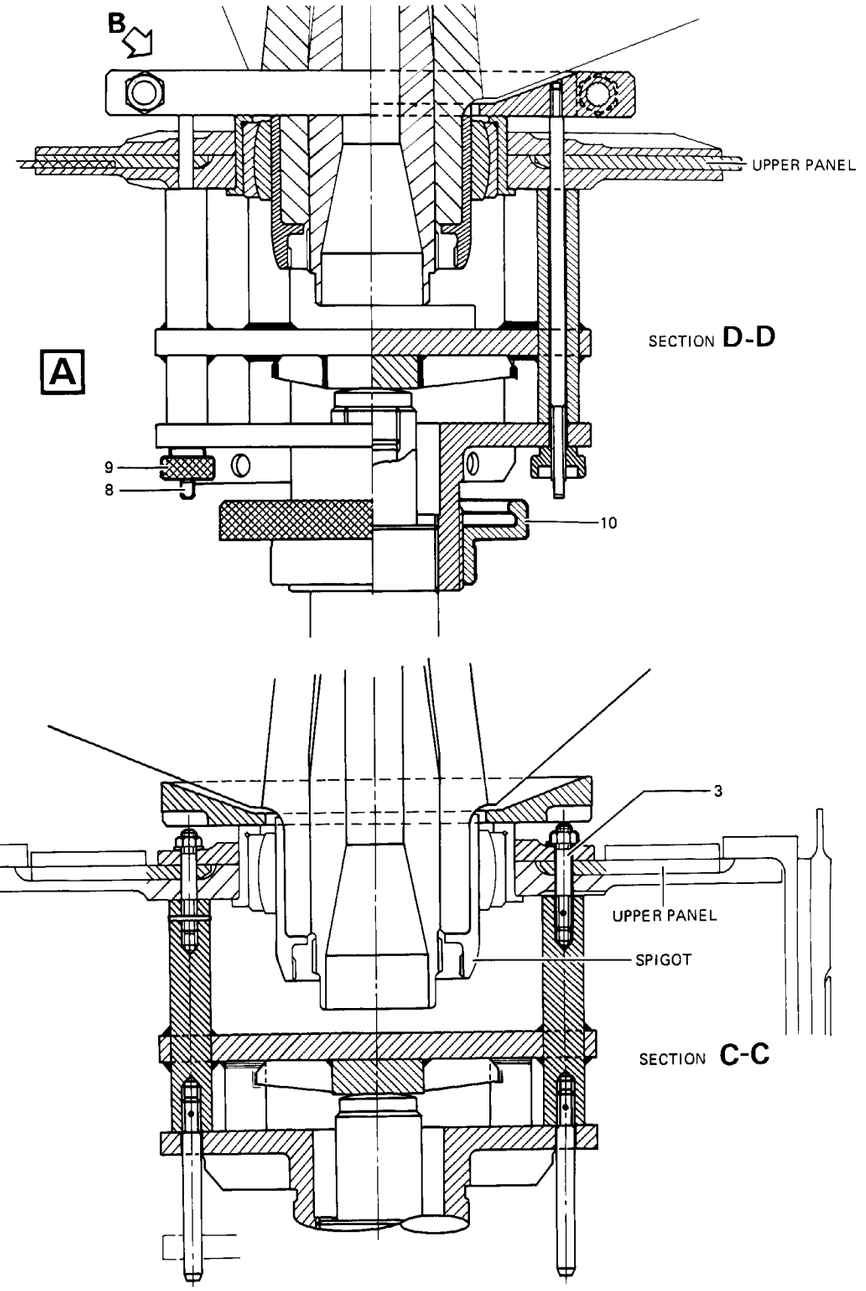
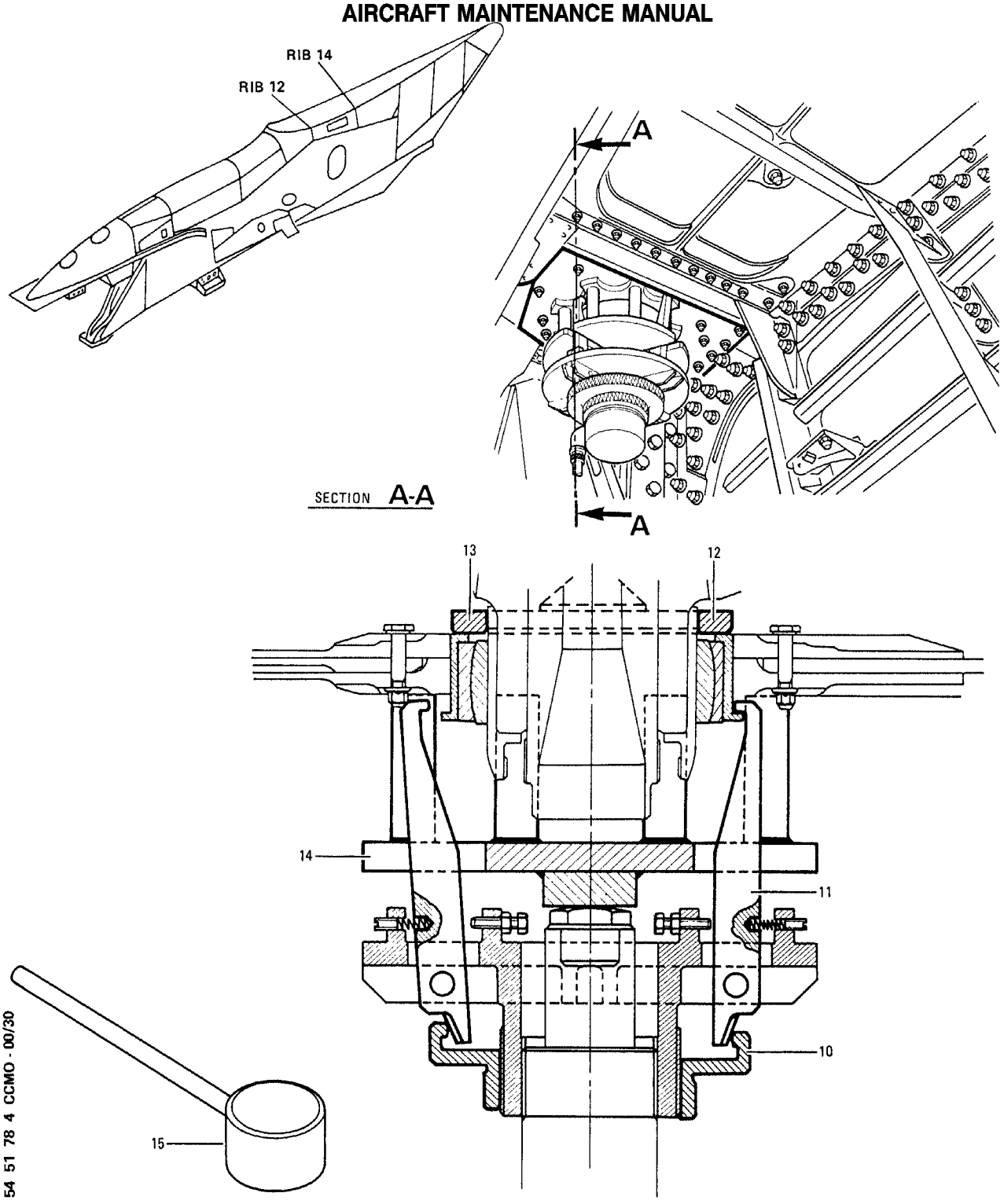








Ball Joint Removal - First Step
Figure 402



Ball Joint Removal - Second Step
Figure 403

2 Insert gently ball joint into housing.
3 Install plate (19) on threaded rods and screw nuts (20).
4 Install completely ball joint while progressively tightening nuts (20) and recover half segments (12) and (13).
5 Remove tool 98A54403011002 (sub assy of 98A54403011000).
6 Perform a seal with Material No. 08-004 between the upper panel and the lower section of the ball joint.
(Ref. Fig. 404)
(Ref. Fig. 405)

(b)Install flange (2) on lower ball joint fitting using eight bolts (1) If two of the bolts (1) have been sawn off during removal, install
R new bolts with heads downward (Ref. Fig.).

(c)Between upper panel and wing apply Material No. 08-004 to protect upper
R ball joint fitting (Ref. Fig.).

(d)If engine has been removed, install it (Ref. 71-00-00, P. Block 401).

(6)Close-up

(a)Install fire extinguisher bottles (Ref. 26-21-15, P. Block 401)

(b)Install panels

1 RH pylon : 481AL, 482AR, 481BL, 482BR.
2 LH pylon : 471AL, 472AR, 471BL, 472BR.

(c)Close access doors

1 RH pylon : 484AR, 483AL.
2 LH PYLON : 474AR, 473AL.

(d)Remove access platforms

(e)In flight compartment on center pedestal remove tool 98A27503003000.

1. Removal/Installation of the Spigot Ball Joint (Pylon Removed)

A. Equipment and Materials

ITEM	DESIGNATION
(1)98A54403028000	Spigot Ball Joint - Removal Tool (Pylon Removed)
(2)Material No. 08-034	Loctite 672 (Ref. 20-31-00)
(3)Material No. 08-004	Bonding and Adhesive Compounds (Ref. 20-31-00)
(4)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedures	
- 26-21-15, P. Block 401	Fire Extinghuisher Bottle
- 54-50-00, P. Block 401	Pylon Removal/Installation

B. Job Set-Up

(1)Remove the pylon (Ref. 54-50-00, P. Block 401).

(2)Make sure that these access doors are open.

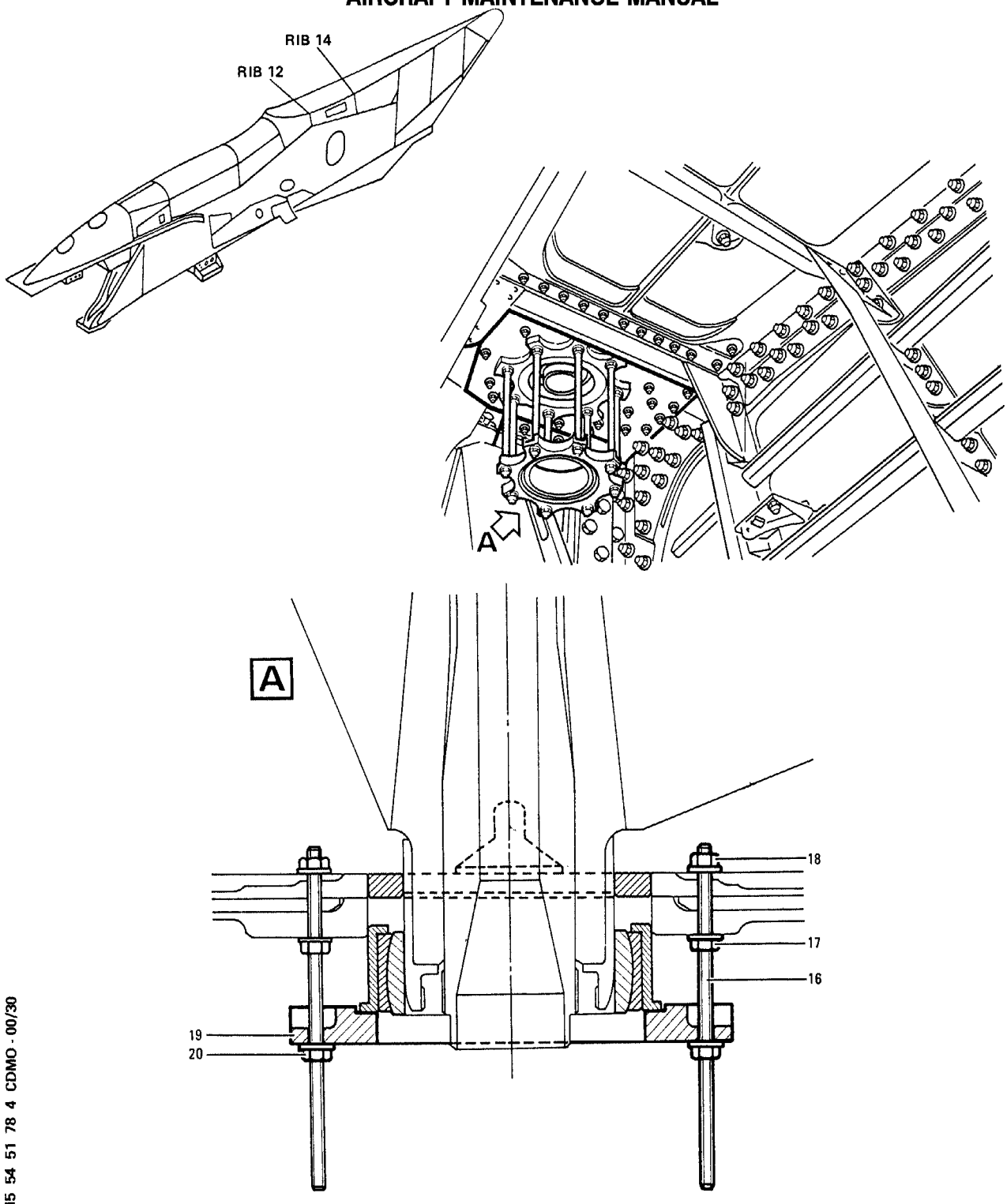
(a)For the right pylon : 484AR

(b)For the left pylon : 473AL

(3)Make sure that the fire extinguisher bottles are removed (Ref. 26-21-15, P. Block 401).

C. Procedure

(Ref. Fig. 406)
(Ref. Fig. 407)



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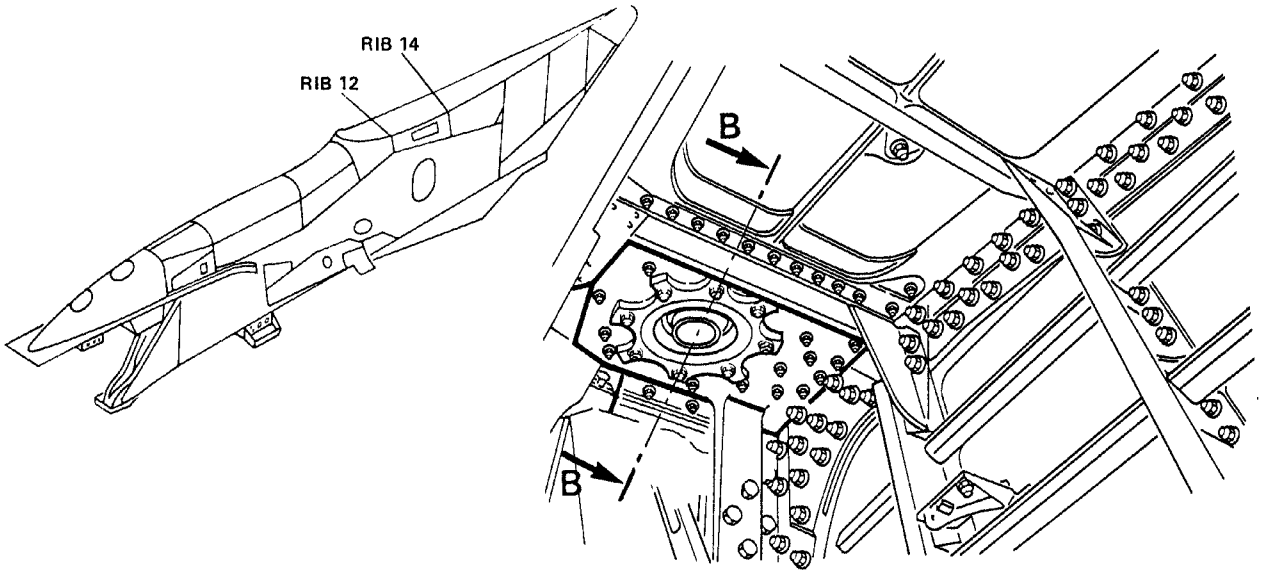
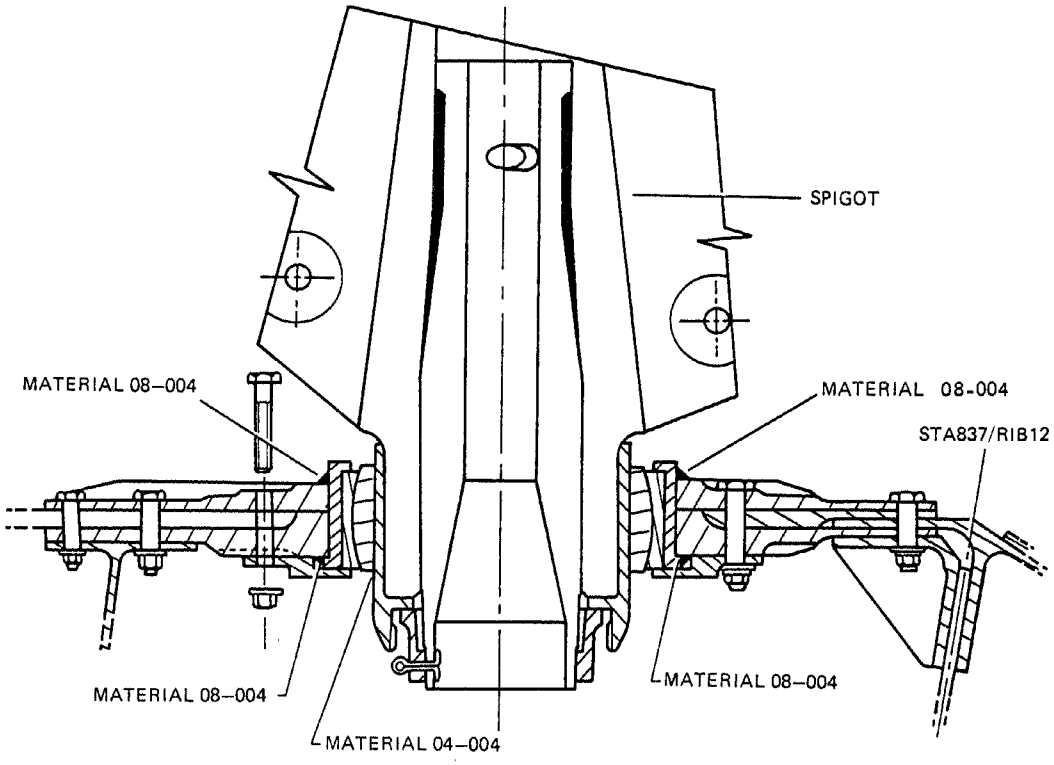
Ball Joint Installation
Figure 404





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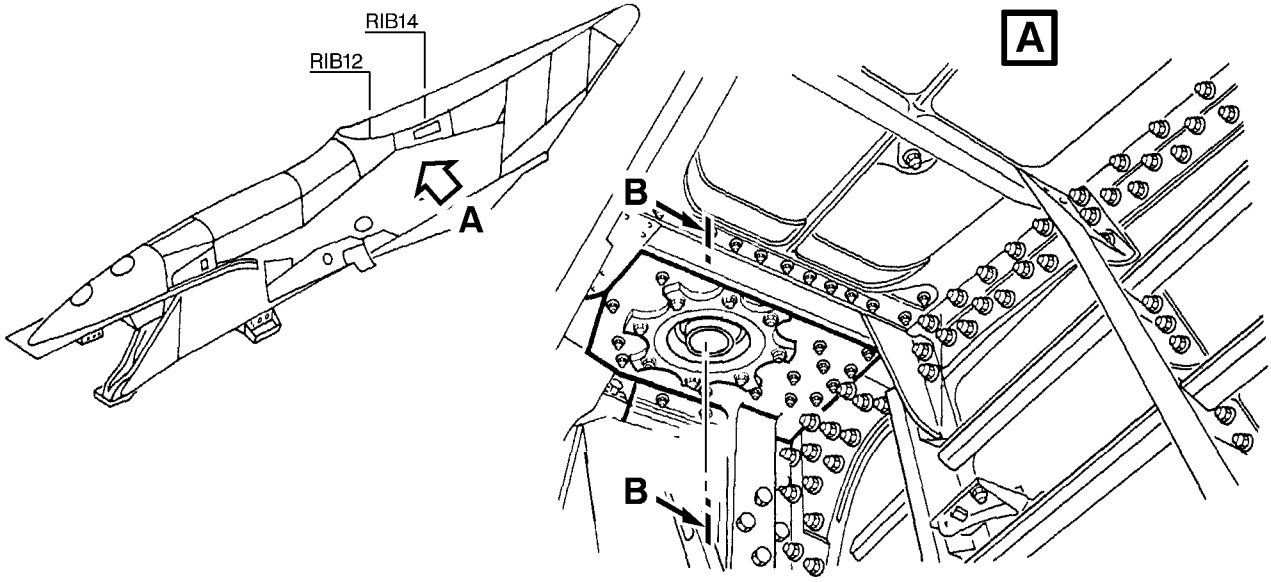
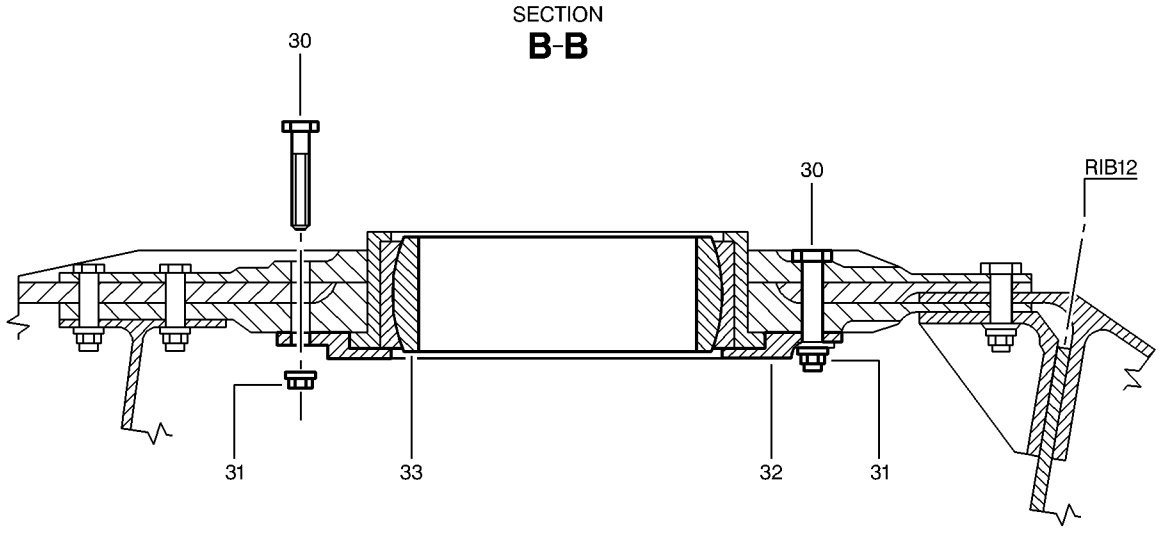
Ball Joint Installation - Protection Against Corrosion
Figure 405





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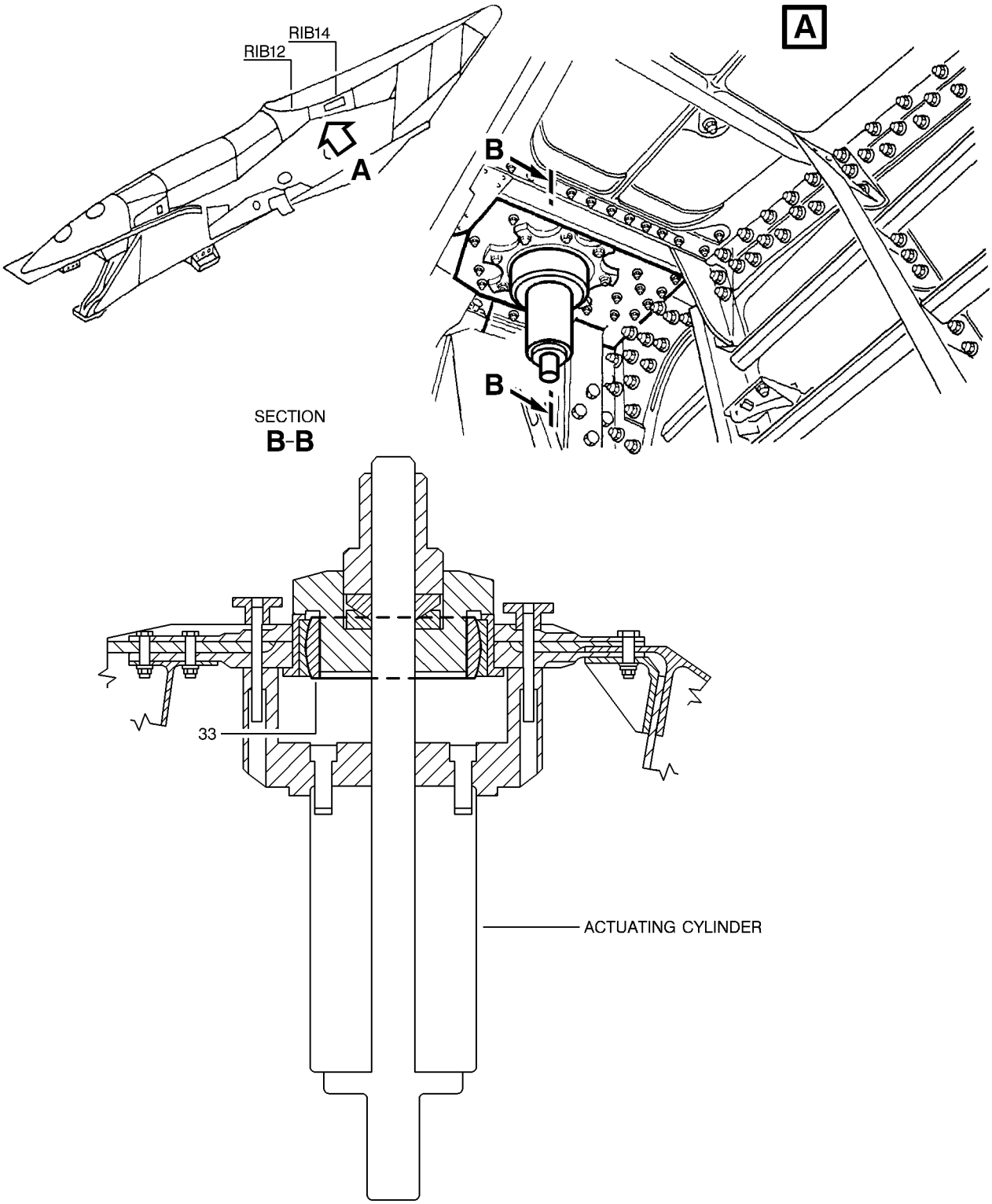
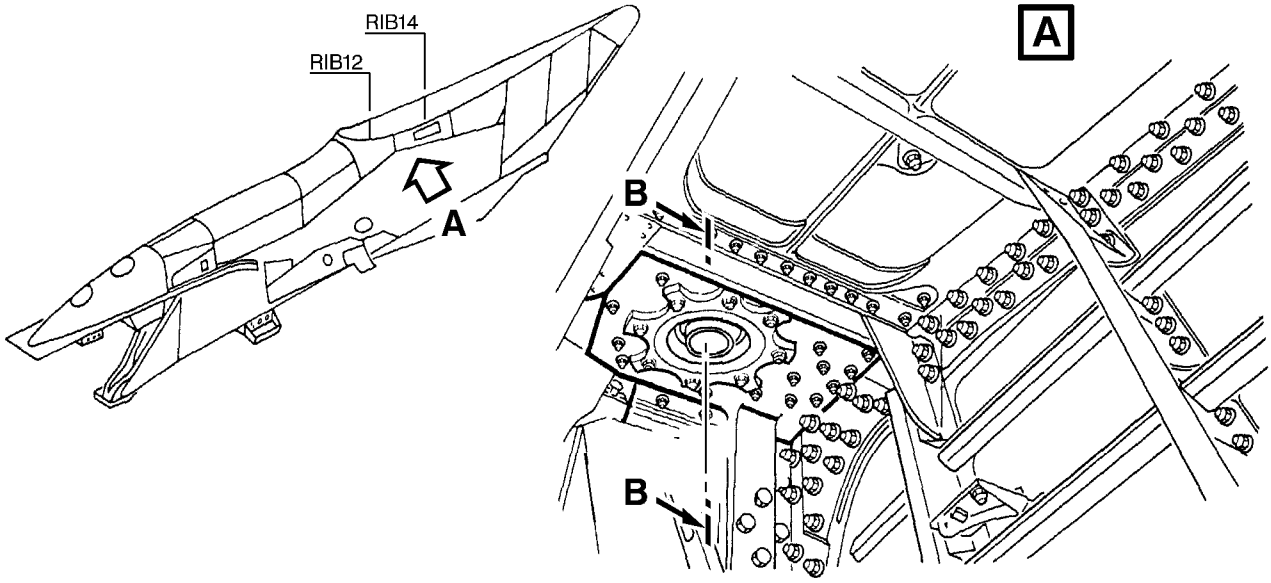
Spigot/Ball Joint Assembly (Pylon Removed)
Figure 406

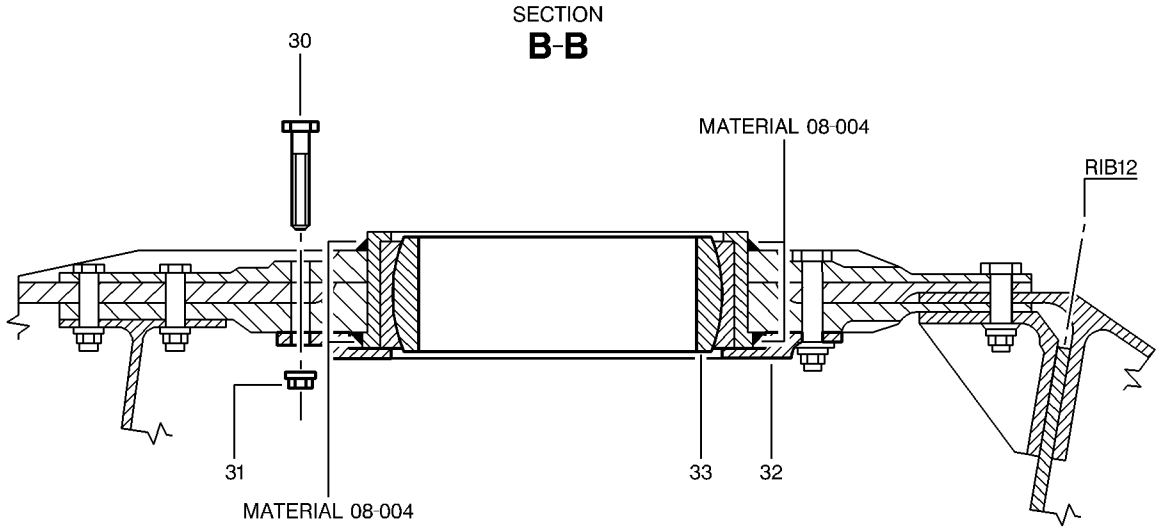


Spigot/Ball Joint Assembly (Pylon Removed)
Figure 407

(1)Removal of the spigot ball joint (33).
(a)On the upper panel, between RIB12 and RIB14 remove the adhesive compound from the upper ball joint fitting.
(b)Remove the nuts (31), the bolts (30) and the flange (32).
(c)Put the tool 98A54403028000 in position under the upper panel.
(d)Pressurize the actuating cylinder of the tool and remove the spigot ball joint (33).
(e)Clean the housing of the spigot ball joint (33) with cleaning agent, Material No. 11-003.
(2)Preparation for replacement
(a)Do a visual check of the spigot ball joint.
(b)Apply Material No. 08-034 on the spigot ball joint housing.
(c)Apply Material No. 08-034 on the spigot ball joint (33). (Ref. Fig. 408)
(3)Installation of the spigot ball joint (33).
(a)Install the spigot ball joint (33).
(b)Install the flange (32), the bolts (30) and the nuts (31) and tighten them.
(c)Apply Material No. 08-004 on the spigot ball joint (33).

D. Close-Up
(1)Install the fire extinguisher bottles (Ref. 26-21-15, P. Block 401).
(2)Close the access doors :
(a)For the right pylon : 484AR
(b)For the left pylon : 473AL
(3)Install the pylon (Ref. 54-50-00, P. Block 401).





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Spigot Ball Joint - Protection Against Corrosion
Figure 408

1. Dimensional Checks of Spigot Fitting

A. Reason for the Job
(1)Check of fits and clearances after removal of one pylon.

B. Equipment and Materials

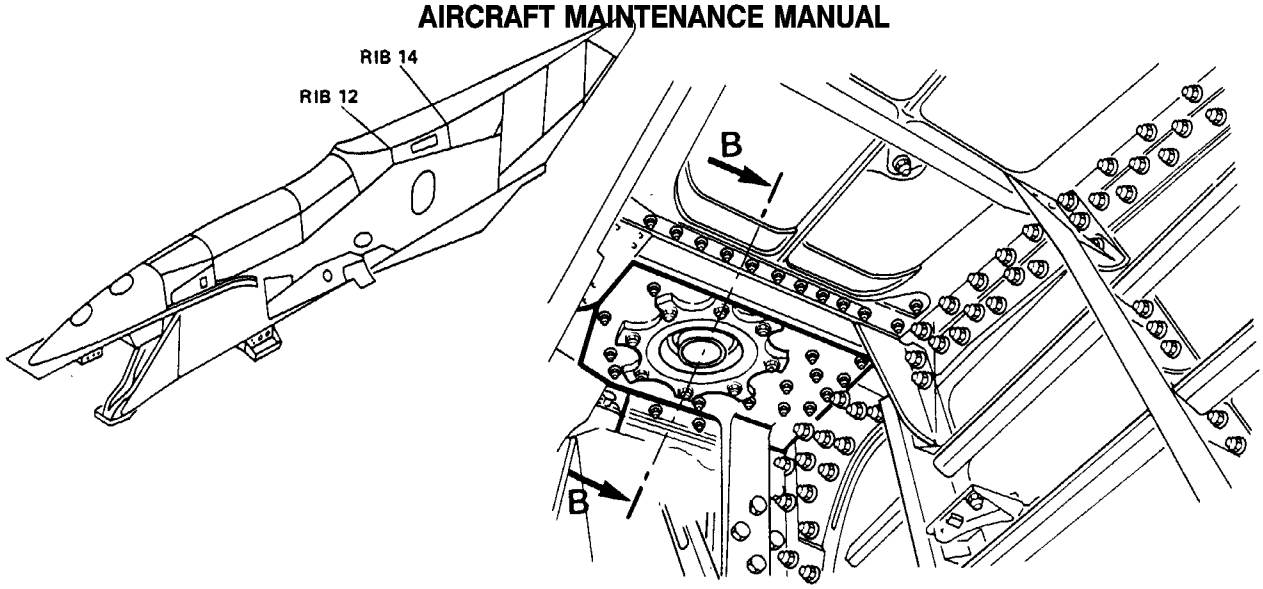
ITEM	DESIGNATION
Referenced Procedure - 54-51-78, P. Block 401	Spigot Ball Joint

C. Procedure
(1)Job set-up
(a)Remove spigot ball joint (Ref. 54-51-78, P. Block 401).
(2)Inspection
(a)Check the following dimensions :
NOTE : When wear limits are exceeded, install an oversized ball joint (2) (Ref. 54-51-78, P. Block 401).
(Ref. Fig. 601)

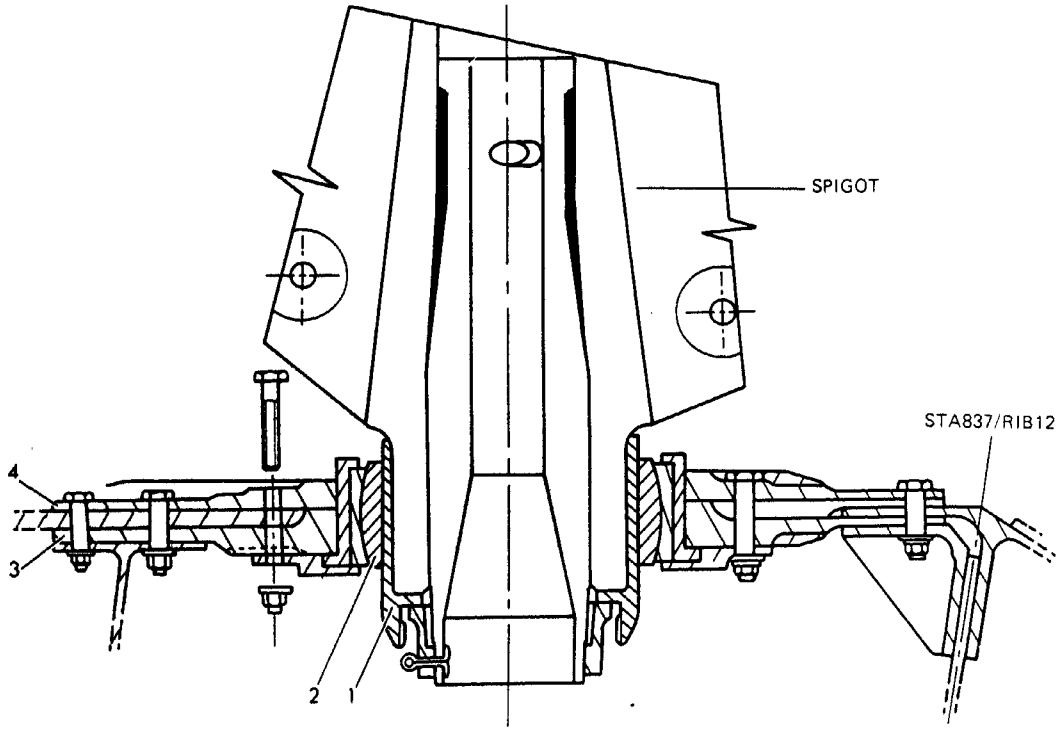
Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Millimeters)		Dimension Limits Inches (Millimeters)		Max. Allow. Clear in. (mm)
	Min.	Max.	Min.	Max.	Min.	Max.	
B OD1	3.4632 (87.966)	3.4641 (87.988)			3.4622 (87.942)		
			0.00055 (0.012)	0.0027 (0.069)			0.0056 (0.142)
ID2	3.4646 (88.000)	3.4659 (88.035)				3.4678 (88.083)	
OD2	4.7228 (119.960)	4.7244 (120.000)			4.7217 (119.933)		
			0.000	0.0032 (0.080)			0.0063 (0.160)
ID3	4.7244 (120.000)	4.7260 (120.040)				4.7281 (120.094)	
OD2	4.7228 (119.960)	4.7244 (120.000)			4.7217 (119.933)		
			0.000	0.0032 (0.080)			0.0063 (0.160)
ID4	4.7244	4.7260				4.7281	

Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Millimeters)		Dimension Limits Inches (Millimeters)		Max. Allow. Clear in. (mm)
	Min.	Max.	Min.	Max.	Min.	Max.	
	(120.000)	(120.040)				(120.094)	

(3)Close-up
(a)Install spigot ball joint (Ref. 54-51-78, P. Block 401).



SECTION B-B



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Spigot Ball Joint
Figure 601

AFT ATTACH FITTING - REMOVAL/INSTALLATION

NOTE : This procedure must be performed when engine is removed. It enables condition of lower spar at interface area to be checked.

1. Removal/Installation of Aft Attach Fitting

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Torque Wrench
(3)Material No. 04-014A	Common Greases (Ref. 20-31-00)
- Referenced Procedures	
- 54-51-00, P. Block 601	Pylon Box
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Cowl Doors

B. Procedure

(1)Job set-up

(a)Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b)Remove engine (Ref. 71-00-00, P. Block 401).

(c)Install pylon access platform.

(d)Remove hydraulic reservoir pressurization line as follows : (Ref. Fig. 401)

1 Loosen nuts (3) and (9) of line couplings.

2 Loosen nuts (2) and (4) and retain bolts (1) and (5) with washers.

3 Detach clamps (8) from lower cap.

4 Remove line by pulling it towards aircraft forward section.

5 Blank open ends of lines with blanking caps.

6 Remove plate if required by removing nut (7).

(2)Removal (Ref. Fig. 402)

NOTE : The removal procedure is identical for each bolt.

(a)Loosen bolts (13), retain washers (12) and nut (11).

(b)Remove lock plates (14).

NOTE : You must first remove the adjusted shear bolt (18) located in the aft left hole of the attach fitting and then remove the three tension bolts (15).

(c)Fully loosen bolts (18) and (15) and remove them and discard washers (16).

(d)Maintain aft attach fitting throughout the job.

(e)Remove aft attach fitting and shim.

(3)Preparation of replacement component

(a)Visually inspect:

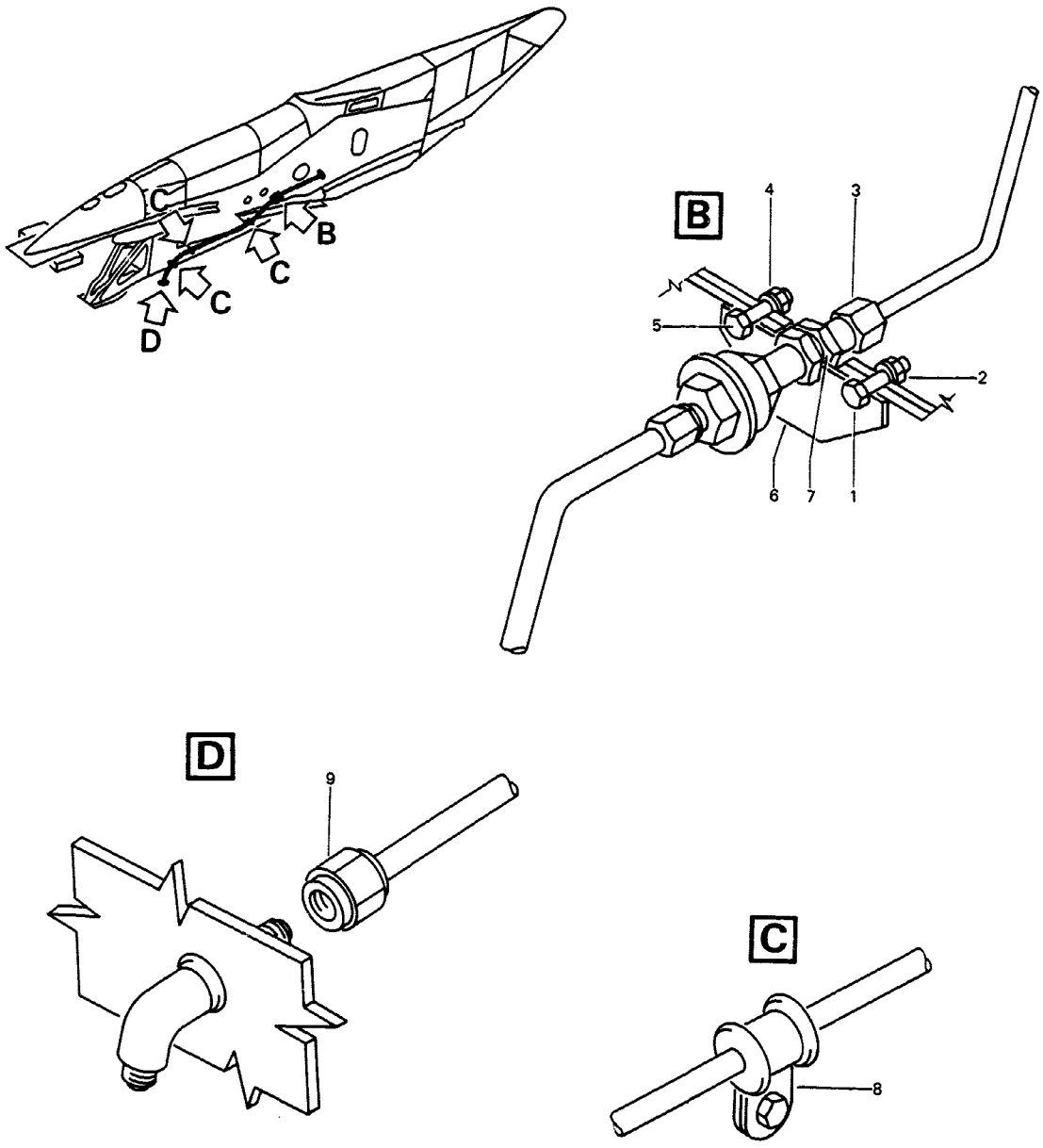
1 Shim and aft attach fitting (Ref. 54-51-00, P. Block 601).

2 Interface area with pylon lower cap (Ref. 54-51-00, P. Block 601).

3 Lockplate (14) and bolts (15) and (18).

R 4 Replace the bolts (15) and (18), if necessary.

(b)On aft attach fitting, remove plate (6) if required by following instructions given in para. B (1)(d)2.



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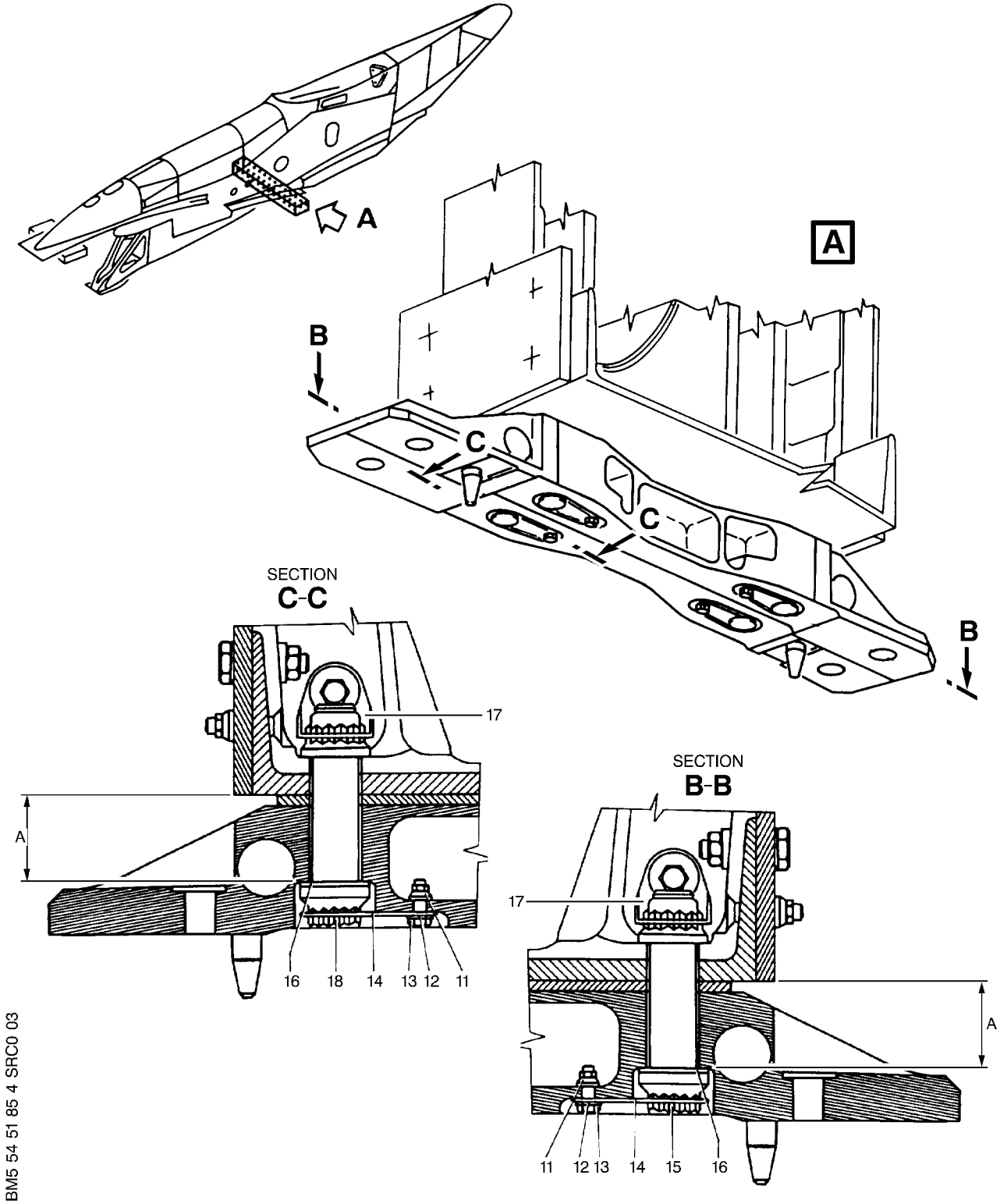
Hydraulic Reservoir Pressurization Line
Figure 401



Removal of Aft Attach Fitting
Figure 402

R

(4)Check of the running torque and of the breakaway torque.
(Ref. Fig. 402, 403)

R (a)Install the bolts (15) and the bolt (18), if replaced, in the
R nuts (17).

(b)With a torque wrench calibrated to 6.8 m.daN (600 lbf.in.), measure the running torque required to tighten the bolts (15) and the bolt (18) until:
- A minimum of two threads show from the nut (17) or
- you get a distance A plus 1 mm (0.039 in.) between the lower surface of the lower spar and the contact surface between the bolt head and the fitting (aft attach fitting removed).

(c)If the running torque is more than 6.8 m.daN (600 lbf.in.), replace the nut (17) (refer to step 5).

(d)Loosen the bolts (15) and the bolt (18).

(e)With a torque wrench calibrated to 0.79 m.daN (60 lbf.in.), measure the breakaway torque required to loosen the bolts (15) and the bolt (18).

(f)If the breakaway torque is less than 0.79 m.daN (60 lbf.in.), replace the nut (17) (Refer to step 5).

NOTE: Before installation of the new nuts (17), do a check of the running and the breakaway torque as described in Para (4).

(5)Replacement of the nut (17)

NOTE : The removal procedure is identical for each nut (17).

(a)Remove access panels 415AL, 416AR, 425AL or 426AR.

(b)Remove bolt (25), washer (24) and nut (21).

(c)Remove concerned retainer (22) and shim (23).

(d)Remove defective nut (17).

(e)Position new nut (17) with its retainer (22) and shim (23).

(f)Assemble bolt (25), washer (24), retainers (22), shims (23) and nut (21).

(g)Tighten nut (21).

(h)Install access panels 415AL, 416AR, 425AL or 426AR.

(6)Installation

(a)Smear shanks and threads of bolts (15) and (18) and washers (16) with grease "Never seez standard" (Material No. 04-014A).

(b)Install shim and aft attach fitting under lower cap at RIB8.

(c)Screw in but do not tighten the 4 bolts (15) and (18) provided with new washers (16).

NOTE : You must firstly install the three tension bolts (15) and then the adjusted shear bolt (18) located in the aft left hole of the attach fitting.

(d)TORQUE diagonally the 4 bolts to between 63 and 71 m.daN (460 and 518.3 lbf.ft.).

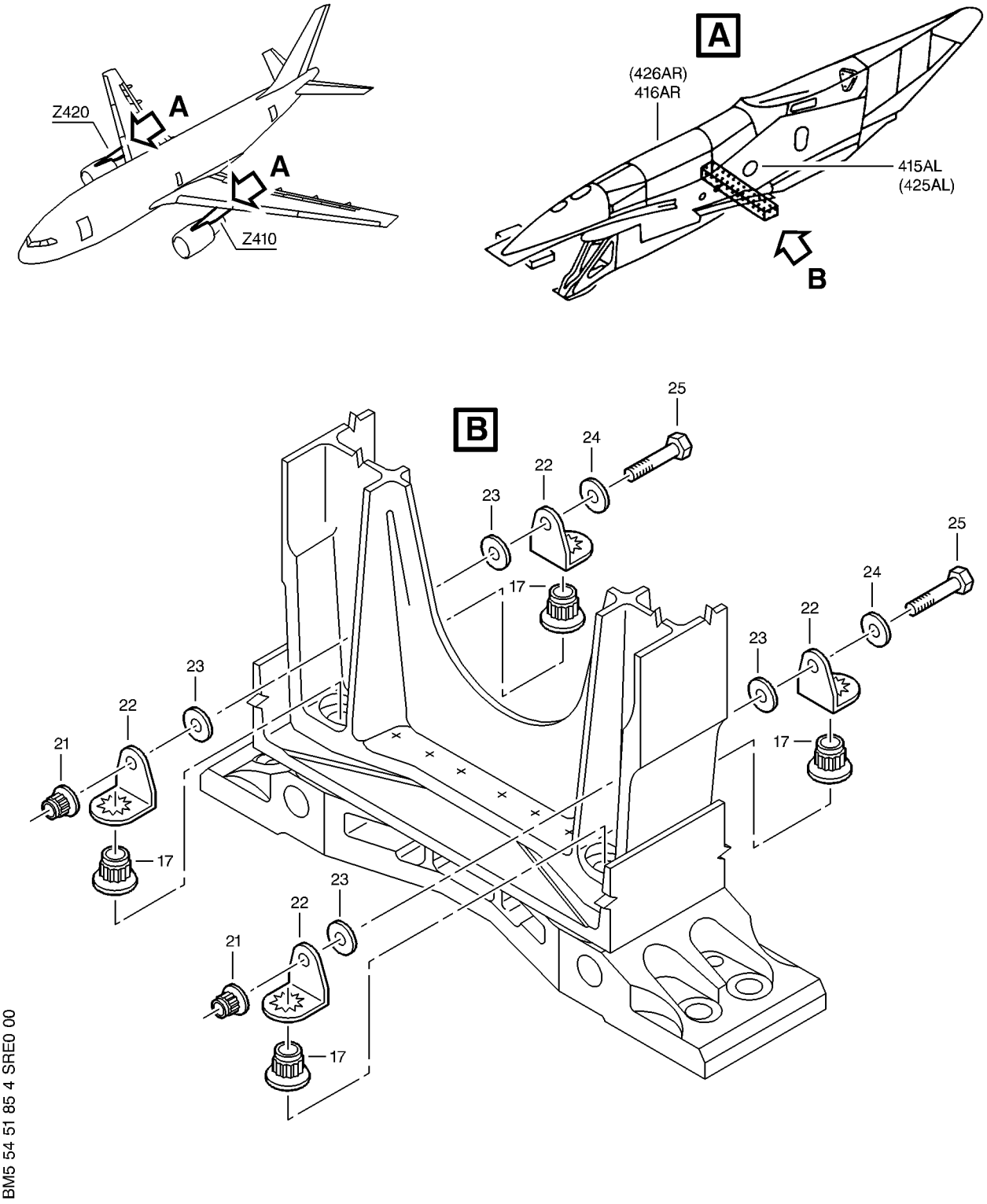
(e)Install lock plate (14).

(f)Attach lock plate (14) to aft attach fitting using bolt (13) provided with a new washer (12) and nut (11).

(7)Close-up

(a)Install plate (6) on pressurization line and screw in nut (7). Do not tighten.

(b)Install pressurization line



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Aft Attach Fitting - Replacement of the Nuts
Figure 403

R

1 Position line with clamps.
2 Attach plate (6) to aft attach fitting using bolts (1) and (5) provided with washers and nuts (2) and (4).
3 Tighten nuts (3) and (9) of line couplings.
4 Tighten nut (7).
5 Position and attach clamps (8) to lower cap.
6 Make certain that minimum distance between lower cap and line is greater than or equal to 3 mm (0.118 in.).

(c)Remove access platform.
(d)Install engine (Ref. 71-00-00, P. Block 401).
(e)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

ENGINE AFT MOUNT UPPER BEAM - REMOVAL/INSTALLATION

1. General

A. This procedure provides instructions for removal and installation of the engine aft mount upper beam.

2. Equipment and Materials

ITEM	DESIGNATION
A	Corrosion Resistant Steel Lockwire
B.	Access Platform
C.	Torque Wrench 600 - 650 lbf.ft. (81.35-88.12 m.daN)
D. Material No. 04-014A	Common Greases (Ref. 20-31-00)
Referenced Procedure - 71-00-00, P. Block 401	Power Plant

3. Procedure

A. Job Set-Up
(1)Remove power plant (Ref. 71-00-00, P. Block 401).
(2)Install access platform.

B. Removal (Ref. Fig. 401)
CAUTION : LOOSEN ALL FOUR BOLTS 1/3 TURNS BEFORE REMOVING THE BOLTS. FAILURE TO DO SO MIGHT CAUSE GALLING IN ONE OF THE HOLE SURFACES.
(1)Remove bolts (1) and (4) and washers (2) from beam and remove beam from pylon.
NOTE : You must first remove the adjusted shear bolt (1) located on the forward left hole of the beam and then the three tension bolts (4).

C. Preparation of Replacement Component
(1)Visually inspect the beam and the bolts (1) and (4), replace the bolts (1) and (4) if necessary.

D. Check of the Running Torque and the Breakaway Torque (Ref. Fig. 402)
(1)Install the bolts (4) and the bolt (1) into the nuts (3).
(2)With a torque wrench calibrated to 9 m.daN (800 lbf.in.), measure the running torque required to tighten the bolts (4) and the bolt (1) until :
- two thread minimum show out of the nut (3) or
- you get a distance A plus 1 mm (0.039 in.) between the lower surface of the lower spar and the contact surface between the bolt head and the beam (beam removed).
(3)If the running torque is more than 9 m.daN (800 lbf.in.), replace the nut (3).
(4)Loosen the bolts (4) and the bolt (1).
(5)With a torque wrench calibrated to 1.02 m.daN (90 lbf.in.), measure the

breakaway torque required to loosen the bolts (4) and the bolt (1).

(6)If the breakaway torque is less than 1.02 m.daN (90 lbf.in.), replace the nut (3).

NOTE : Before installation of the new nuts (3), do a check of the running torque and breakaway torque as described in Para. D.

E. Replacement of the nuts (3)

NOTE : The removal procedure is identical for each nut (3).

(1)Open access panels 415AL, 416AR, 425AL or 426AR.
(2)Remove bolt (15), washer (14) and nut (11).
(3)Remove concerned retainer (12) and shim (13).
(4)Remove defective nut (3).
(5)Position new nut (3) with its retainer (12) and shim (13).
(6)Assemble bolt (15), washer (14), retainers (12), shims (13) and nut (11).
(7)Tighten nut (11).
(8)Install access panels 415AL, 416AR, 425AL or 426AR.

F. Installation (Ref. Fig. 401)

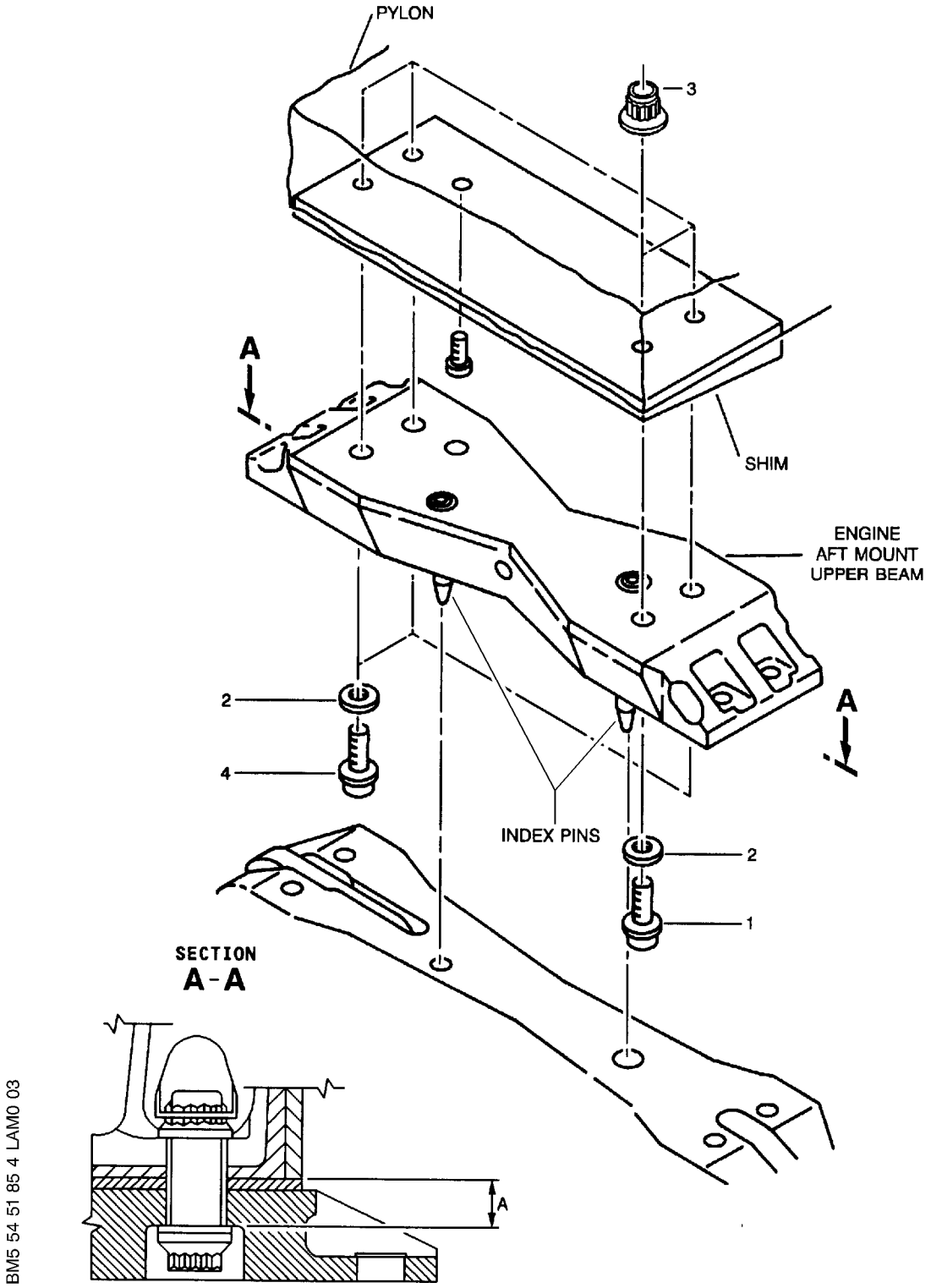
(1)Lubricate bolts (4) and (1) threads and shank and washers (2) with grease "Never Seez Standard" (Material No. 04-014A).
(2)Position beam on pylon with index pins pointing down and large index pin on left side. Align recess in beam with bolts (4) and (1) which attach shim to pylon. Place countersunk side of washers (2) against bolt heads and install bolts (4) and (1) and washers (2).

NOTE : You must first install the three tension bolts (4) and then the adjusted shear bolt (1) located on the forward left hole of the beam.

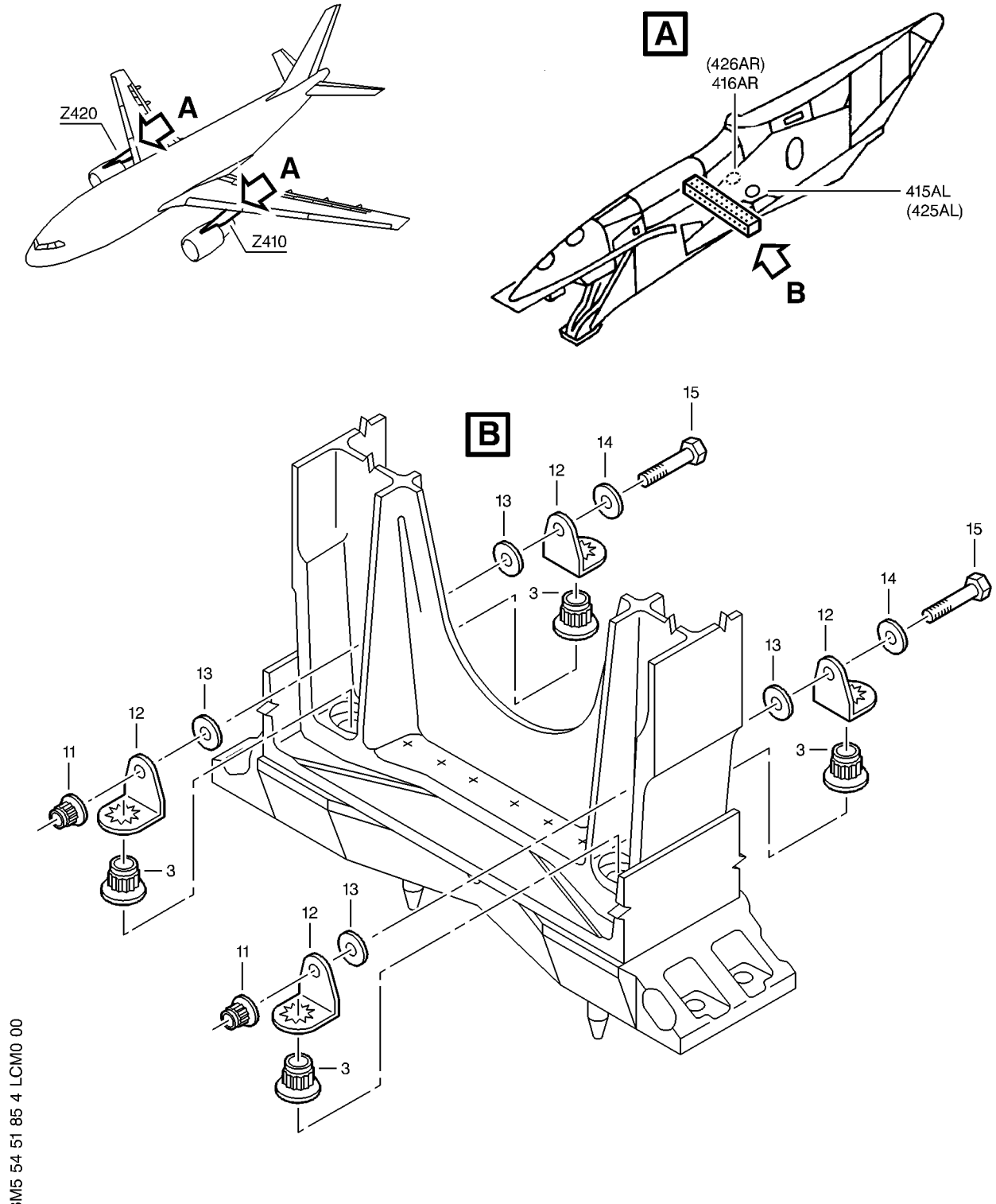
(3)TORQUE bolts (4) and (1) to between 600 and 650 lbf.ft. (81.35 and 88.12 m.daN) and wirelock.

E. Close-Up

(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(2)Remove access platform.
(3)Install power plant (Ref. 71-00-00, P. Block 401).



Engine Aft Mount Upper Beam
Figure 401



Aft Attach Fitting - Replacement of the Nuts
Figure 402

ENGINE AFT MOUNT UPPER BEAM - INSPECTION/CHECK

1. General

A. This procedure provides informations for inspecting the engine aft mount upper beam.

R 2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
Referenced Procedure	
- 54-51-85, P. Block 401	Engine Aft Mount Upper Beam
- 71-00-00, P. Block 401	Power Plant
- CMM/71-20-05	

3. Procedure

A. Job Set-Up
(1)Remove engine (Ref. 71-00-00, P. Block 401).
(2)Install access platform.
(3)Remove/Disassemble the aft mount upper beam assembly (Ref. 54-51-85, P. Block 401).

B. Inspection
(1)Inspect the following

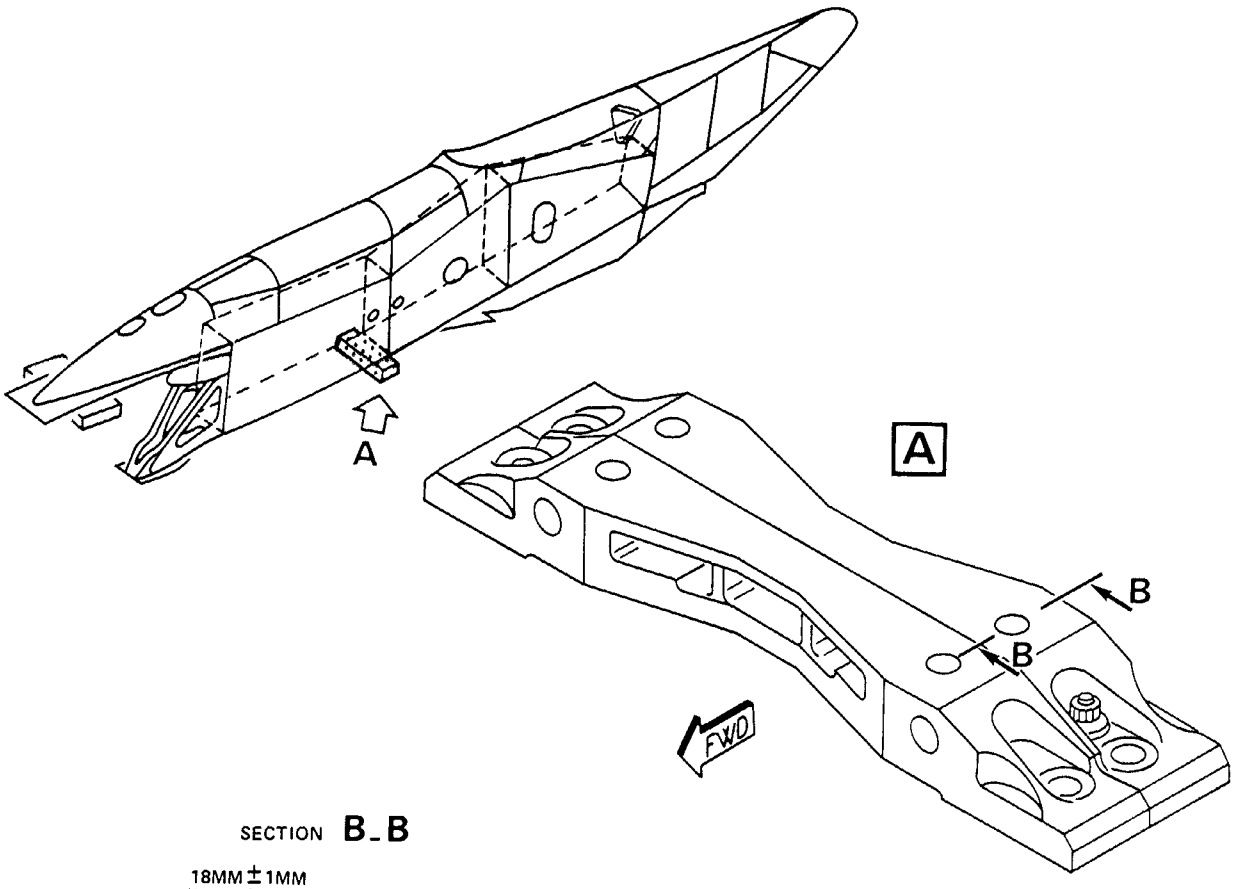
INSPECT/CHECK	MAXIMUM SERVICEABLE LIMITS	REMARKS
(a)Upper Beam for :		
1 Cracks	No cracks allowed	Replace if defective
2 Corrosion	Any amount up to 0.005 in. (0.13 mm) deep	Blend
3 Nicks/Scratches	One per every 4 sq in. (26 sq cm), 0.015 in. (0.38 mm) deep, 1 in. (25.0 mm) long. No sharp grooves allowed	Blend
4 High metal on mating surfaces	No high metal allowed	Remove high metal
5 Fretting on lower beam interface	Any amount not exceeding 0.003 in. (0.08 mm) after removal of high metal	
	Any amount not exceeding 0.007 in. (0.18 mm) deep	Blend

INSPECT/CHECK	MAXIMUM SERVICEABLE LIMITS	REMARKS
	on interface surface and not to exceed 10 % of interface area	
(b)Allowable in-Service Hole oversize	Refer to CMM 71-20-05, P. Block 801.	

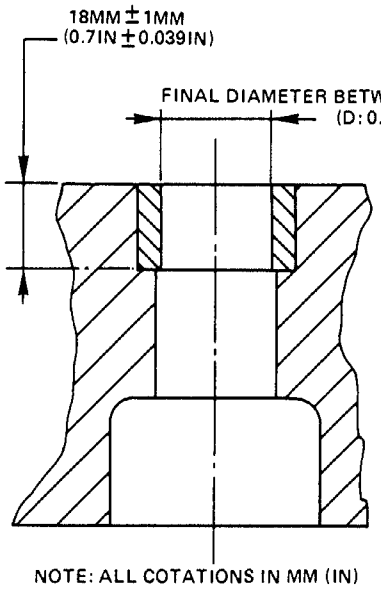
C. Close-Up
(1)Install aft mount upper beam assembly (Ref. 54-51-85, P. Block 401).
(2)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(3)Remove access platform.
(4)Install engine (Ref. 71-00-00, P. Block 401).

1. Repair of Attach Fitting Bolt Hole (Rear Left)

A. When permissible wear limit is exceeded, repair procedure consists in manufacturing a bush and inserting it in defective hole.
(Ref. Fig. 801)



SECTION B-B



NOTE: ALL COTATIONS IN MM (IN)

– MATERIAL OF BUSH:
Z6 CNT 25 OR A286

– ADJUSTMENT OF EXTERNAL DIAMETER

. FITTING HOLE DIAMETER
25MM +0.021MM
+0MM

(0. 98425IN +0.00082IN)
+0 IN

. BUSH DIAMETER
25MM +0.035MM
+0.022MM

(0.98425IN + 0.00137IN)
+0.00086IN)

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Engine Aft Attach Fitting -
Repair of Rear Left Bolt Hole
Figure 801

AFT ATTACH FITTING SHIM - REMOVAL/INSTALLATION

1. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
Referenced Procedures	
- 36-00-00, P. Block 401	Pneumatic General
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-85, P. Block 401	Aft Attach Fitting (RIB8)
- 71-00-00, P. Block 401	Power Plant - General

2. Procedure

A. Job set-up
(1)Remove engine (Ref. 71-00-00, P. Block 401).
(2)Remove engine aft attach fitting (Ref. 54-51-85, P. Block 401).
(3)Install access platforms at engine pylon.
(4)Open upper cowls 413BL (423BL) and 413DL (423DL).
(5)Remove bleed air precooler (Ref. 36-11-15, P. Block 401).
(6)Remove bleed air precooler duct assembly (Ref. 36-00-00, P. Block 401).
CAUTION : CAP COLD AIR INLET DUCTS AT LEVEL OF BLEED AIR PRECOOLER.
(7)Protect hydraulic lines and electrical cables to avoid deterioration.

B. Removal
(Ref. Fig. 401)
(1)Remove nuts and bolts (10).
(2)Remove nuts and bolts (11). Hold shim during fastener removal.
(3)Remove shim (22).

C. Installation
(1)Position and hold shim (22).
(2)Install bolts and nuts (11).
(3)Install bolts and nuts (10).
(4)Tighten nuts (10) and (11).

D. Close-up
(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
CAUTION : UNCAP COLD AIR INLET DUCTS AT LEVEL OF BLEED AIR PRECOOLER
(2)Install bleed air precooler duct assembly (Ref. 36-00-00, P. Block 401).
(3)Remove hydraulic lines and electrical cables protection.
(4)Install bleed air precooler (Ref. 36-11-15, P. Block 401).
(5)Close upper cowls 413BL (423BL) and 413DL (423DL).
(6)Remove access platforms.
(7)Install aft attach fitting (Ref. 54-51-85, P. Block 401).
(8)Install engine (Ref. 71-00-00, P. Block 401)

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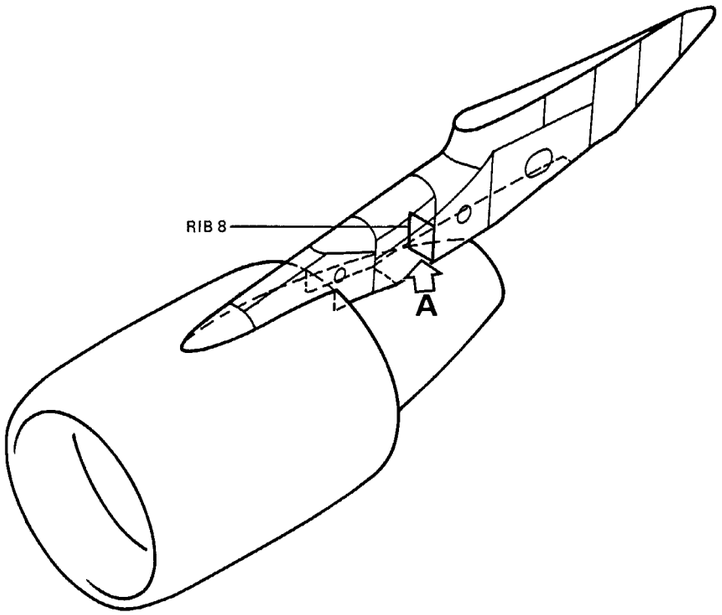

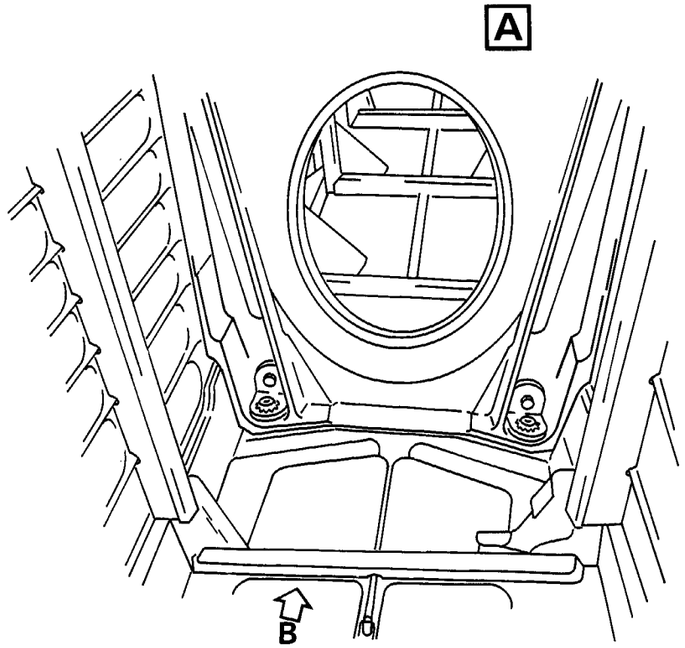

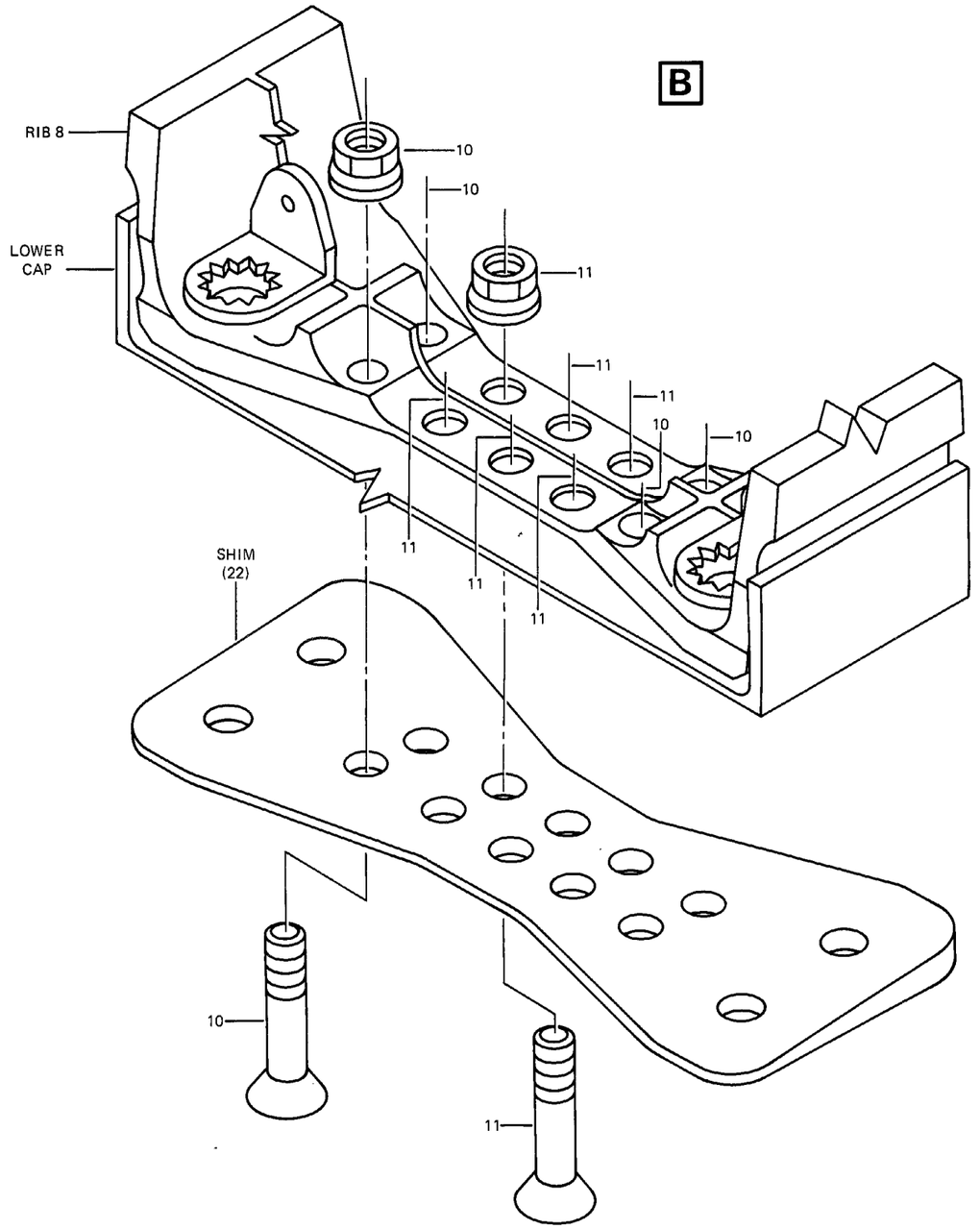

Aft Attach Fitting Shim (RIB8)
Figure 401

AFT ATTACH FITTING SHIM - REMOVAL/INSTALLATION

1. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
Referenced Procedures	
- 36-00-00, P. Block 401	Pneumatic General
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-85, P. Block 401	Aft Attach Fitting
- 71-00-00, P. Block 401	Power Plant - General

2. Procedure

A. Job set-up
(1)Remove engine (Ref. 71-00-00, P. Block 401).
(2)Remove engine aft attach fitting (Ref. 54-51-85, P. Block 401).
(3)Install access platforms at engine pylon.
(4)Open upper cowls 413DL (423DL) and 413BL (423BL).
(5)Remove bleed air precooler (Ref. 36-11-15, P. Block 401).
(6)Remove bleed air precooler duct assembly (Ref. 36-00-00, P. Block 401).
CAUTION : CAP COLD AIR INLET DUCTS AT LEVEL OF BLEED AIR PRECOOLER
(7)Protect hydraulic lines and electrical cables to avoid deterioration.

B. Removal
(Ref. Fig. 401)
(1)Remove nuts and bolts (12) and collect washers.
(2)Remove nuts and bolts (10).
(3)Remove nuts and bolts (11). Hold shim during fastener removal.
(4)Remove shim (22).

C. Installation
(1)Position and hold shim (22).
(2)Install bolts and nuts (11).
(3)Install bolts and nuts (10).
(4)Install bolts (12) fitted with washers and install nuts (12).
(5)Tighten nuts (10), (11) and (12).

D. Close-up
(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
CAUTION : UNCAP COLD AIR INLET DUCTS AT LEVEL OF BLEED AIR PRECOOLER
(2)Install bleed air precooler duct assembly (Ref. 36-00-00, P. Block 401).
(3)Remove hydraulic lines and electrical cables protection.
(4)Install bleed air precooler (Ref. 36-11-15, P. Block 401).
(5)Close upper cowls 413DL (423DL) and 413BL (423BL).
(6)Remove access platforms.
(7)Install aft attach fitting (Ref. 54-51-85, P. Block 401).
(8)Install engine (Ref. 71-00-00, P. Block 401).

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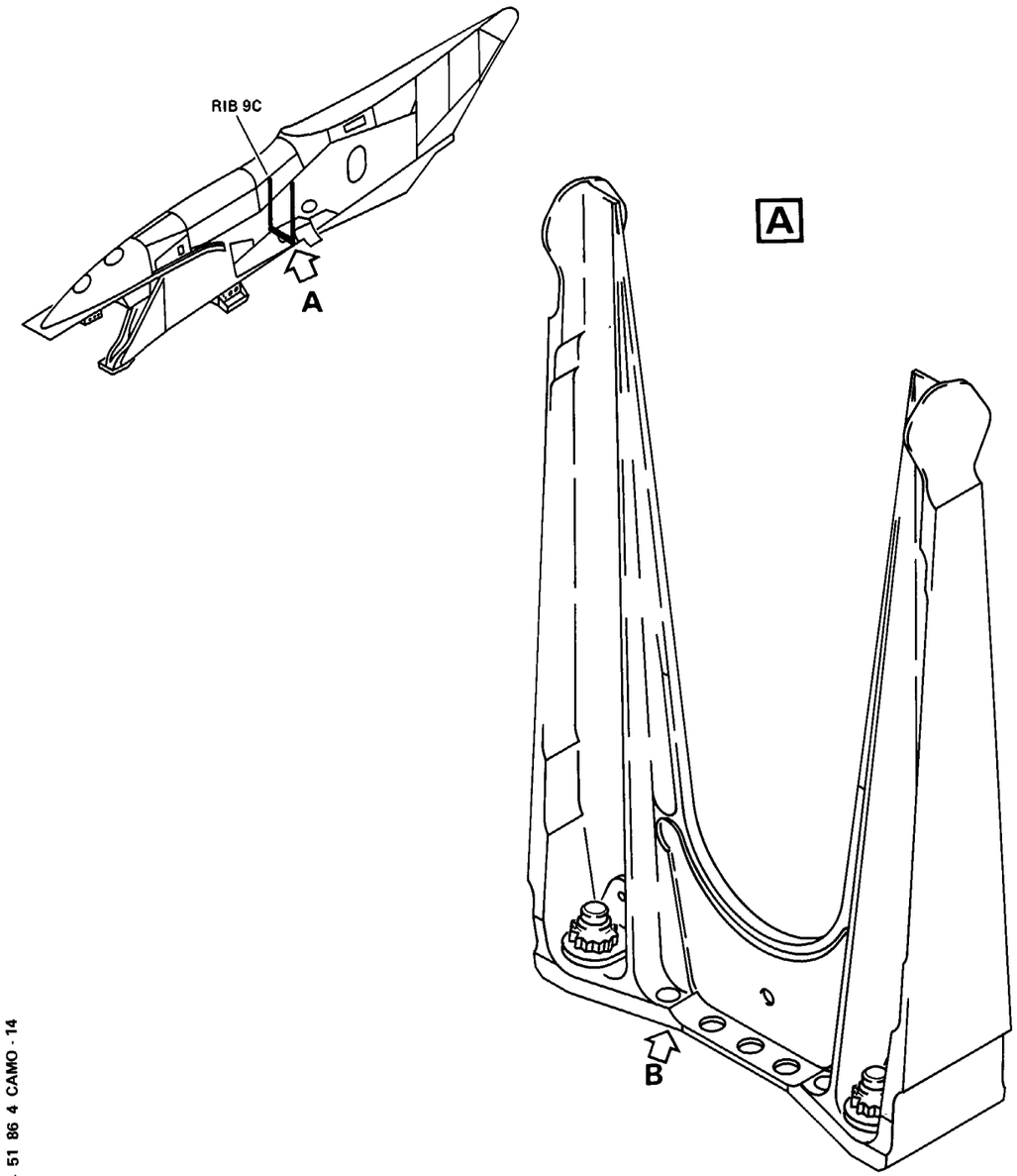

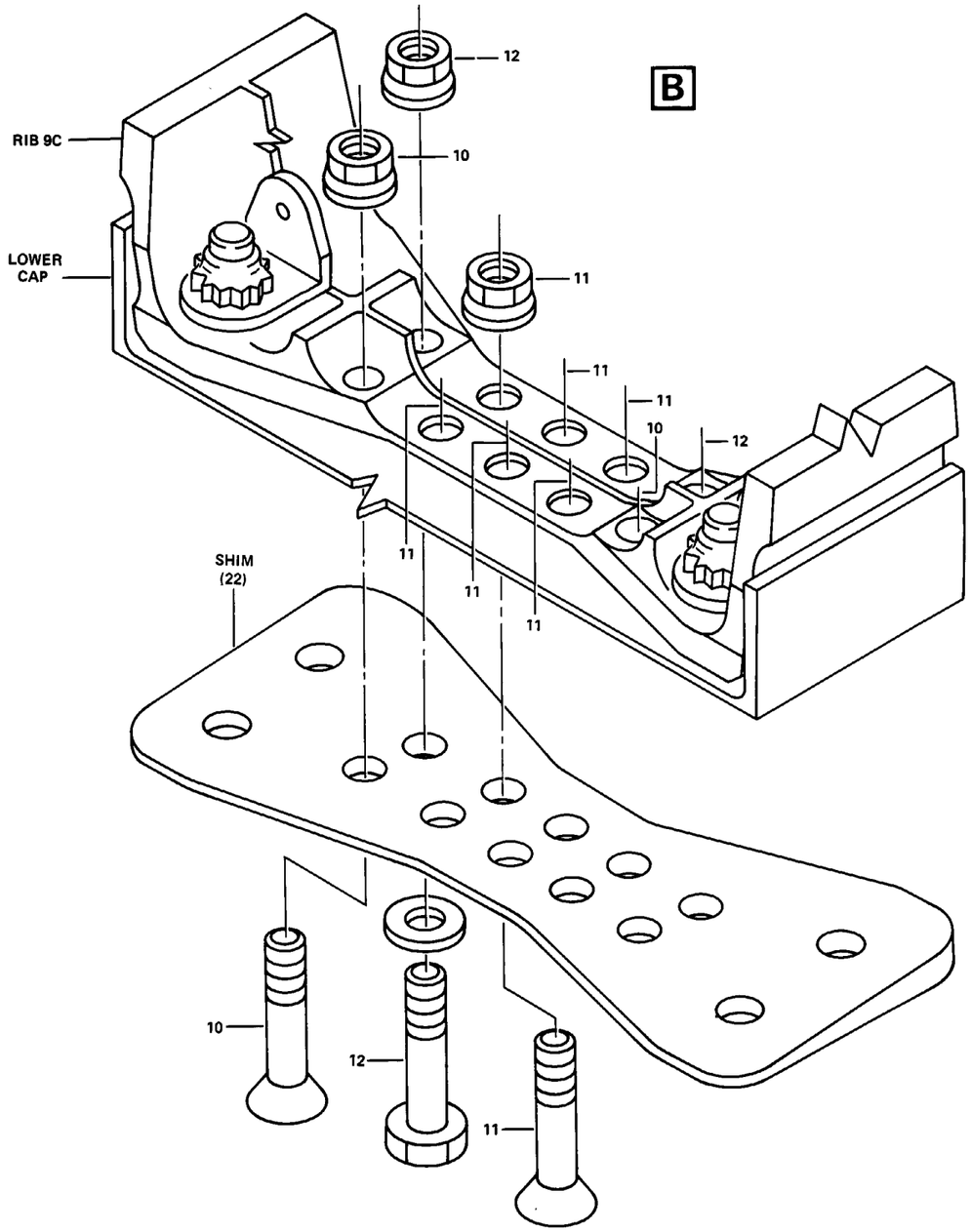

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Aft Attach Fitting Shim
Figure 401

FORWARD FAIRING - DESCRIPTION AND OPERATION

1. General

The three main functions of the engine pylon forward fairing are to :
- provide an aerodynamic fairing to engine pylon
- route and ensure protection of lines and components of various systems
- separate the various systems for safety reasons.

2. Description

The forward fairing can be divided into two sections structurally different :
- the cantilever structure
- structure between RIBs J08 and 10A.

(1)Cantilever structure

It is comprised of :
(Ref. Fig. 001)
- 12 stamped sheet metal ribs, each fitted on their lower section with a transversal stiffener made of folded sheet metal or machined steel
- one stamped sheet spar, on which are attached transverse stiffeners
- two stamped sheet metal plates connecting the transverse ribs and forming a rigid assembly
- two junction edgings which prolong engine cowl contour and are riveted to the spar

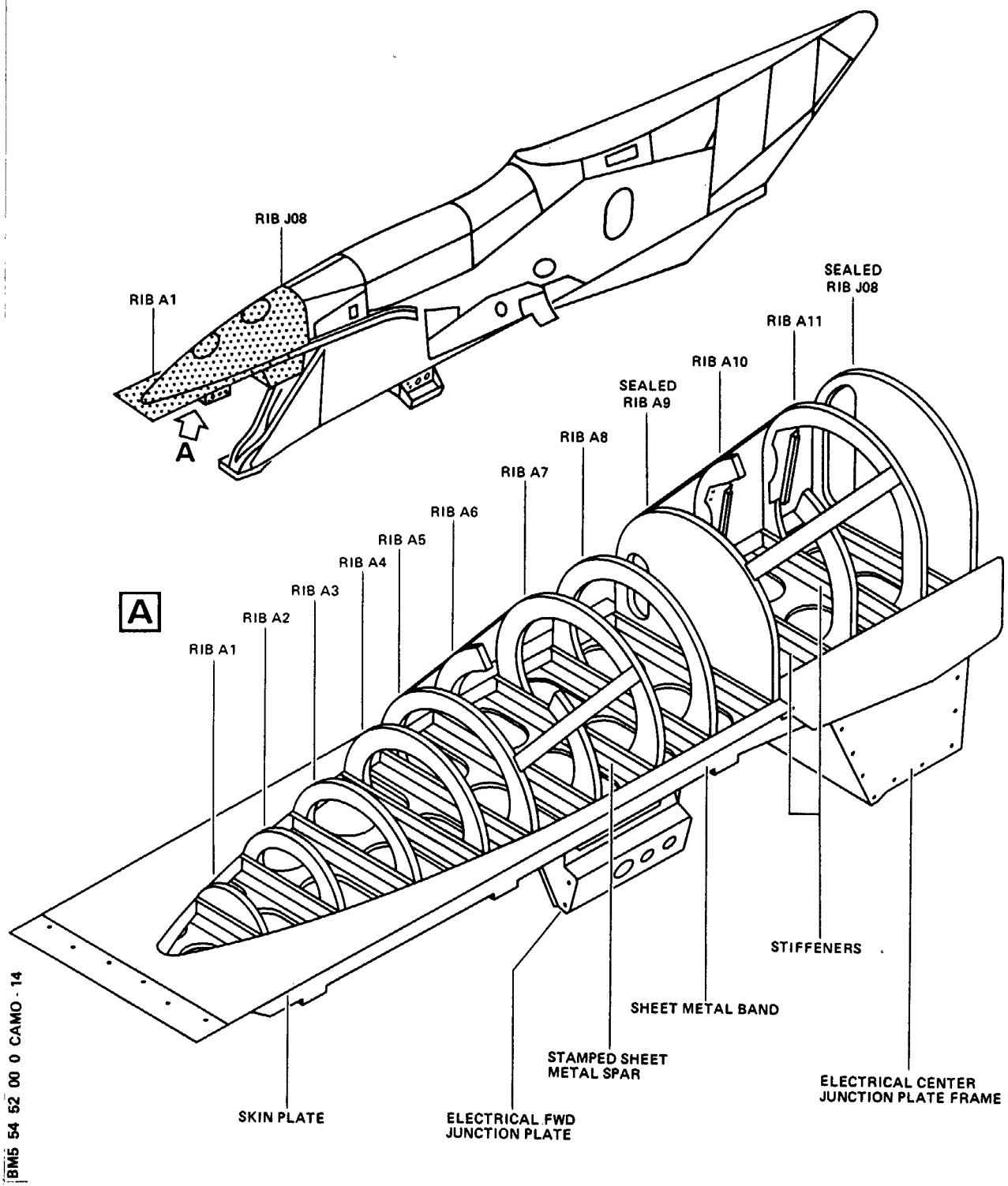
The spar is bolted to the pylon main structure.
The cantilever structure provides an aero-dynamic contour between engine nose cowl and pylon box.
Two electrical junction boxes are installed on the cantilever beam and ensure pylon-to-engine interface.
(Ref. Fig. 002).
(Ref. Fig. 003)
The cantilever beam is divided into two compartments separated by a sealed wall (RIBA9).
The forward compartment is located between RIBs A1 and A9.
It comprises the following routings :
- electrical wiring leading to forward electrical junction box
- pressure lines for thrust reverser opening system
- throttle control and reverse interlock cables.

The aft compartment is located between RIBs A9 and J08.
It comprises the following routings :
- electrical wiring leading to forward and center electrical junction boxes
- pressure lines for thrust reverser opening system
- throttle control and reverse interlock cables.

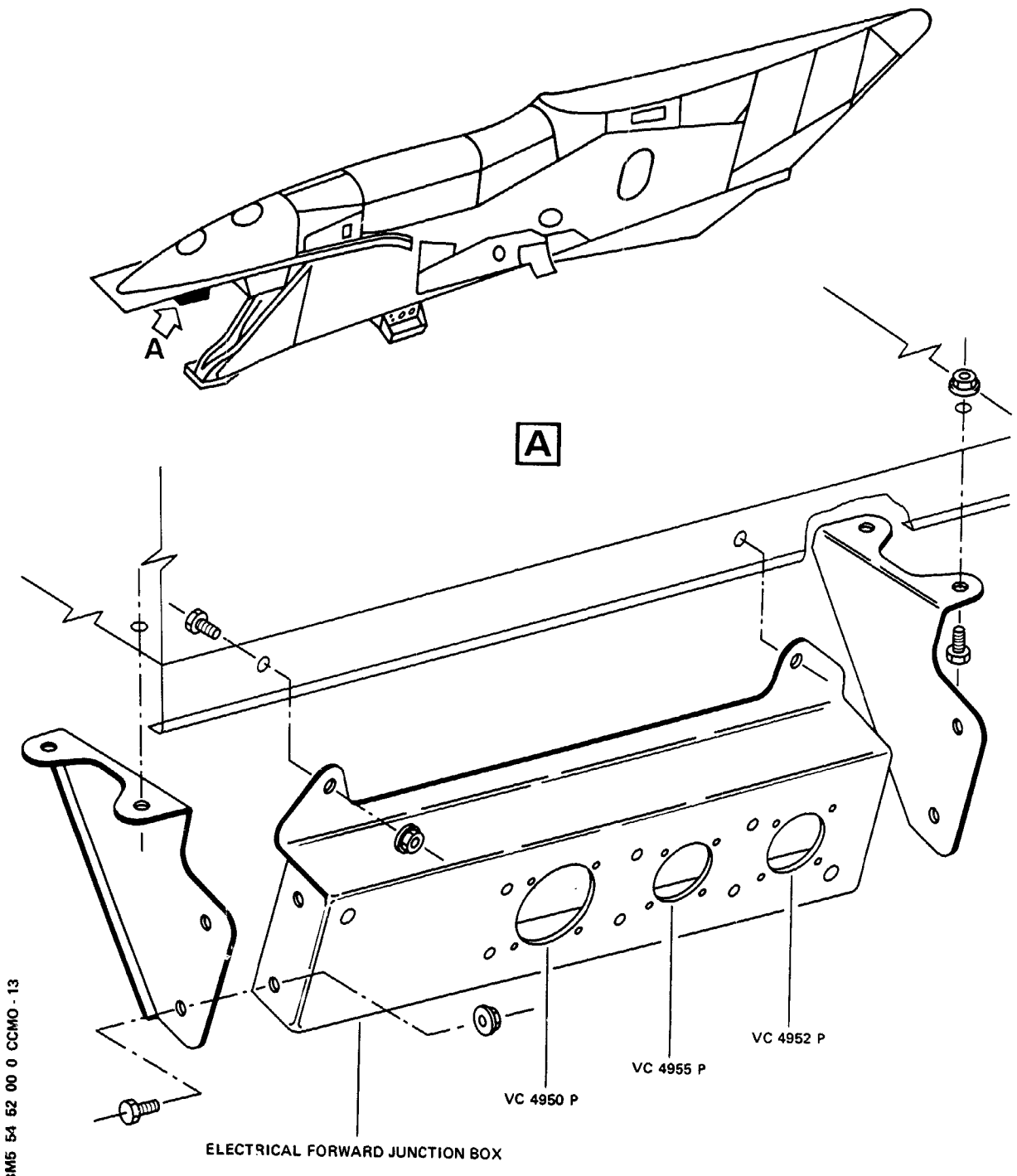
Each compartment has a door in its upper section giving access to the various cables.
Engine cowl hinge fittings are secured to the spar (Ref. 54-56-00).

(2)Forward fairing between RIBs J08 and 10A.

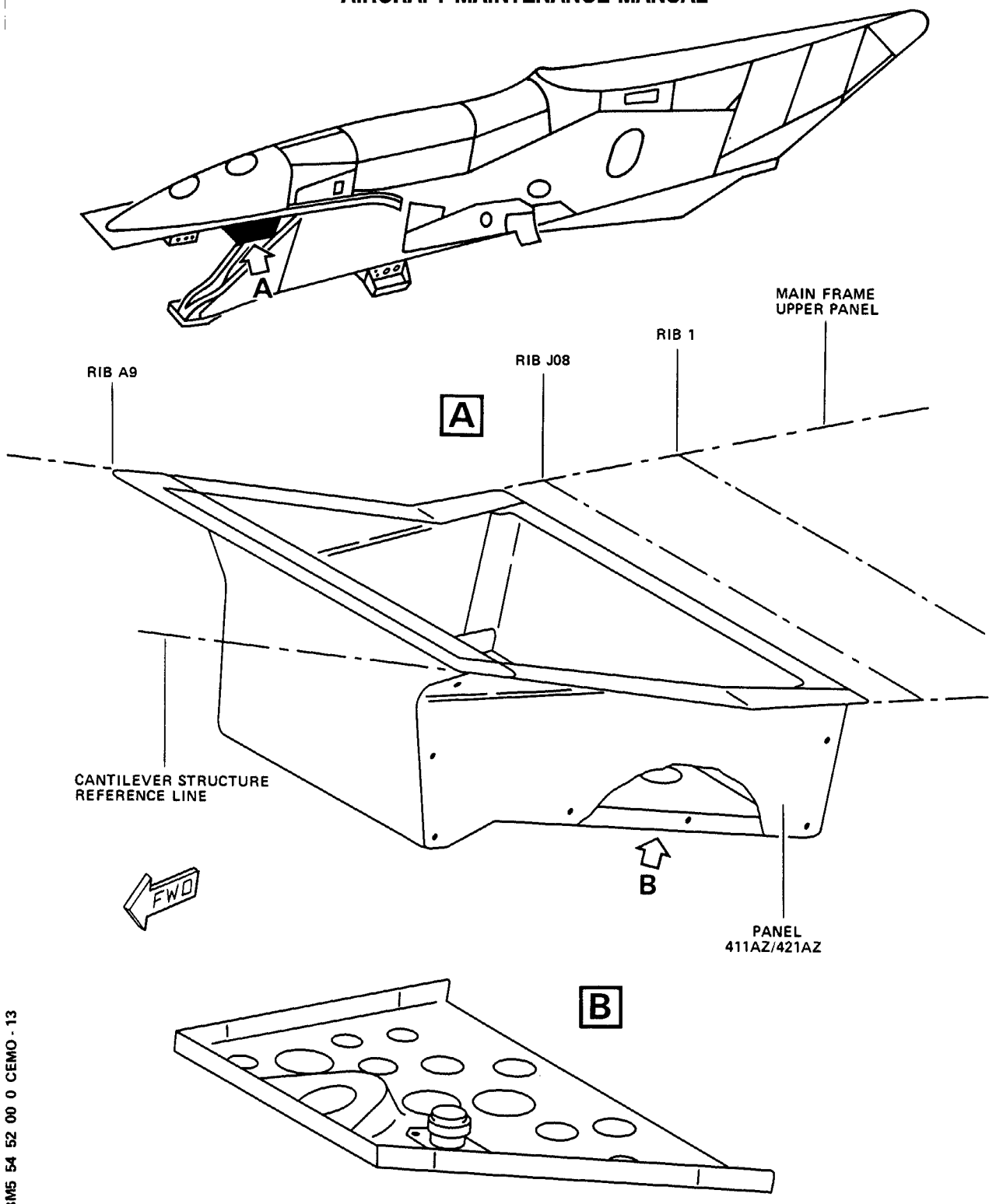
It provides an aerodynamic contour between the cantilever struture and the wing leading edge and enables the routing of various system lines and cables.
The four main elements of this structure are RIBs J08, 3A, 8A and 10A which are attached to the upper panel of the main structure and divide



Cantilever Structure
Figure 001



Engine-to-Pylon Interface Forward Electrical Junction Box
Figure 002



Engine-to-Pylon Interface Center Electrical Junction Box
Figure 003

the structure into three sections.

(a)Section between RIBs J08 and 3A.

(Ref. Fig. 004)

(Ref. Fig. 005)

This section is divided into three compartments, A, B1 and B2, by two metallic panels which are parallel to the pylon longitudinal axis and secured at their ends to RIBsJ08 and 3A.

Compartment A comprises :

- the fuel line elbow. At this level, the fuel line is routed into the main frame via a sealed bulkhead feedthrough
- throttle and reverse interlock cables which are routed into the cantilever structure via a sealed bulkhead feedthrough.
- pressure lines for thrust reverser opening system.

Access to the various systems in compartment A is gained by a light alloy panel bolted to the structure.

(Ref. Fig. 006)

This panel is fitted with a calibrated door designed to open in case of fuel line bursting.

Compartment B1 comprises :

- the precooler hot air bleed duct
- the overpressure valve.

Compartment B1 is fitted with two pressure relief doors calibrated to 200 mbars and designed to open in case of hot air bleed duct bursting.

Compartment B2 comprises the electrical cables routed towards the cantilever structure. The cables are run via a sealed bulkhead feed-through. Access to the system is gained through a light alloy panel, identical to that of compartment A but without pressure relief door.

(b)Section between RIBs 3A and 8A.

(Ref. Fig. 007)

This section is divided into three compartments in the same way as the previous section.

Compartment A comprises :

- a fuel line section with no union
- throttle and reverse interlock cables.

Access to these systems is gained by means of a light-alloy removable panel bolted to the structure.

Compartment B1 encloses the precooler. A bolted removable cowl hermetically seals the precooler and is used as an outlet duct for the precooler cooling air in its upper section.

(Ref. Fig. 008).

Compartment B2 comprises electrical cables. Access is gained through a removable panel identical to that of compartment A.

(c)Section between RIBs 8A and 10A.

The separation is the same as for the two other compartments.

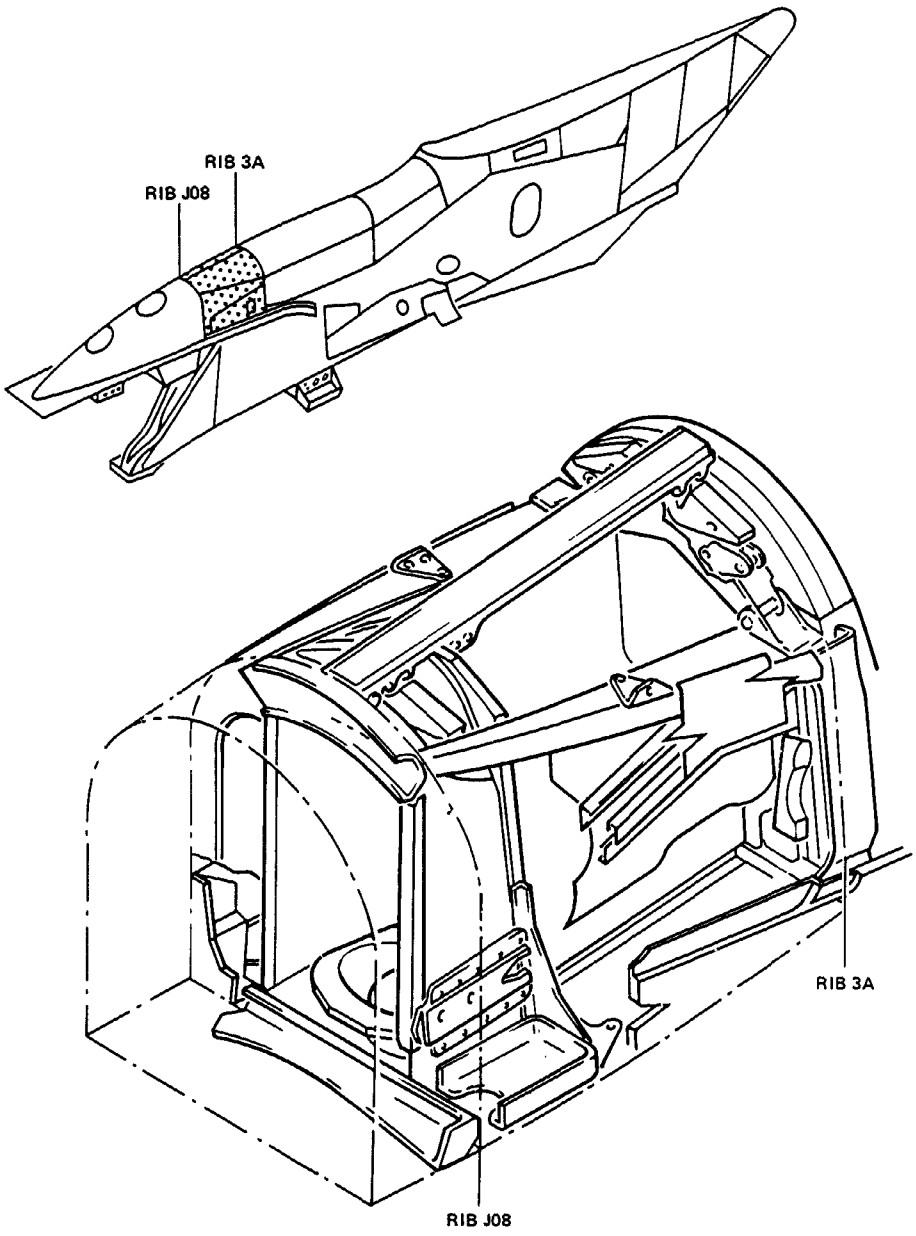
Compartment A comprises :

- the fuel line.

Access to the system is gained through a light-alloy removable panel bolted to the structure.

Compartment B1 comprises :

- the bleed air duct running between the precooler and the wing. As the air blowing inside is at high temperature, the duct is routed



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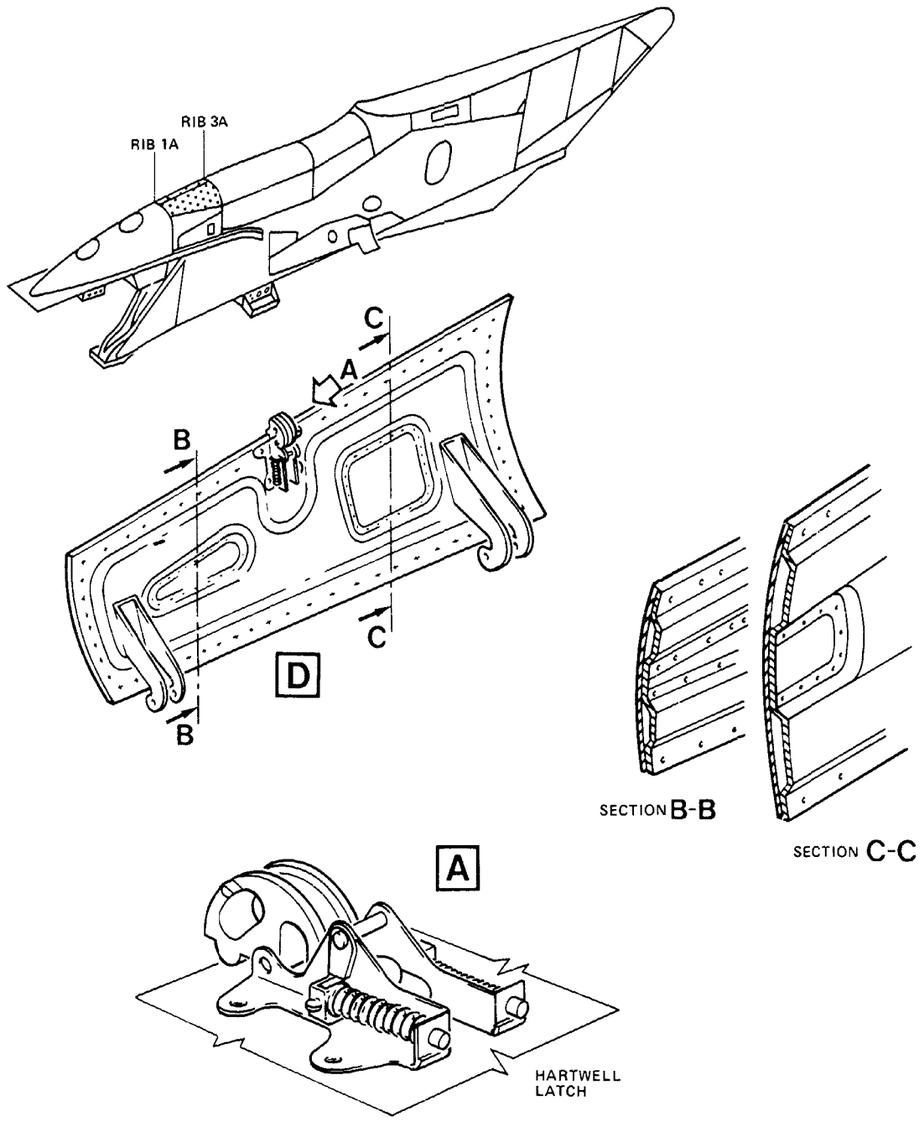
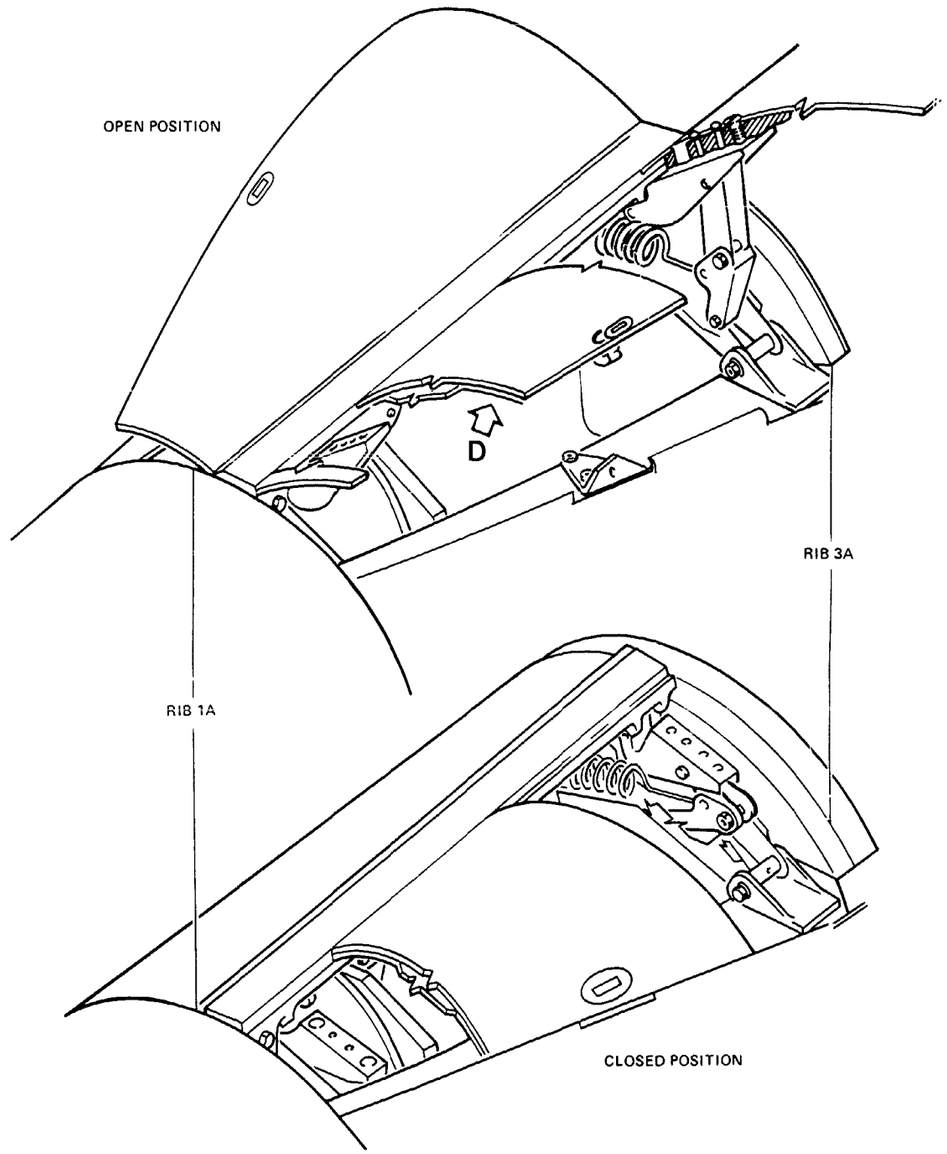
Forward Fairing Between RIBs J08 and 3A
Figure 004





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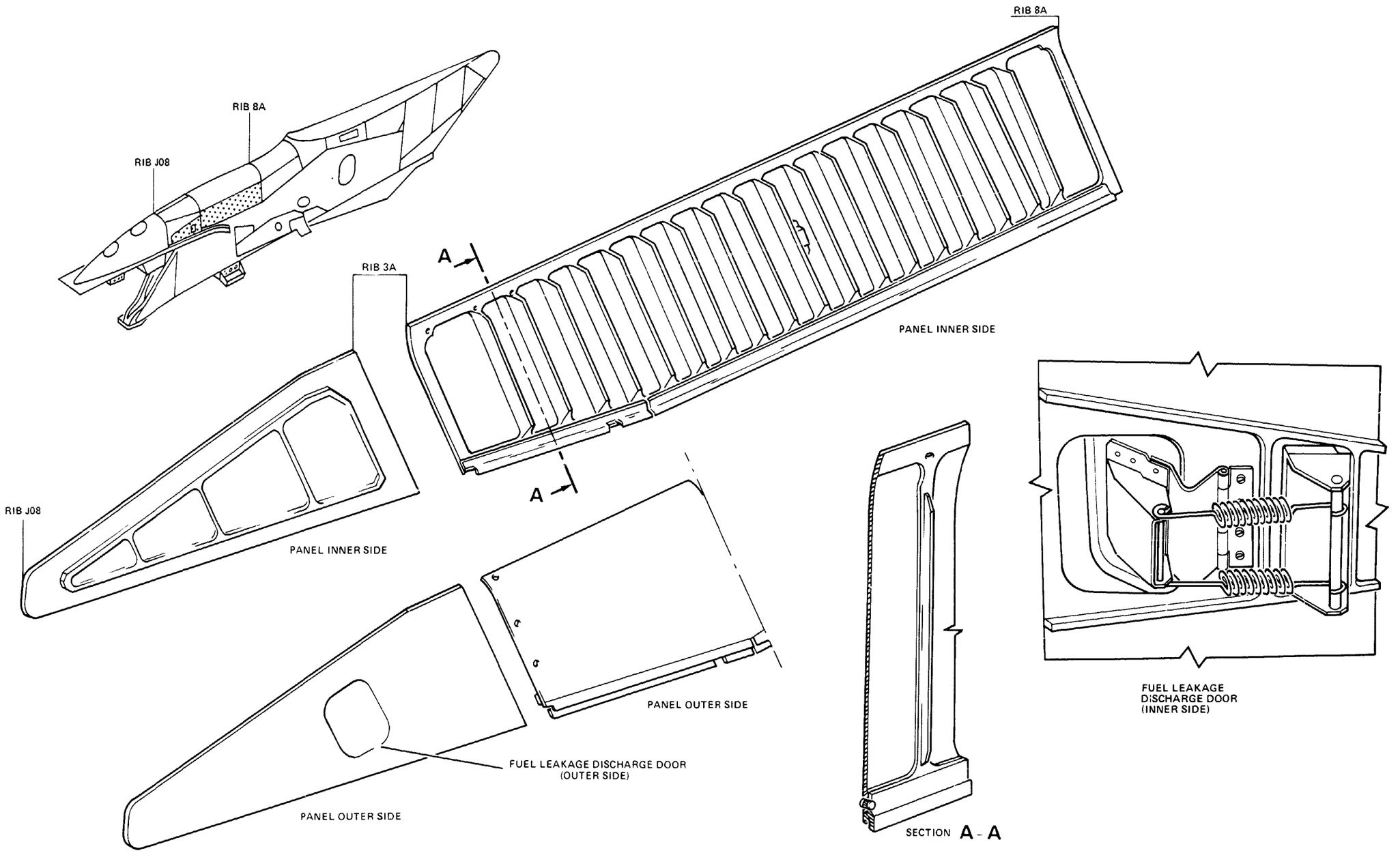
Forward Pressure Relief Doors and Upper Fixed Cowl
Figure 005



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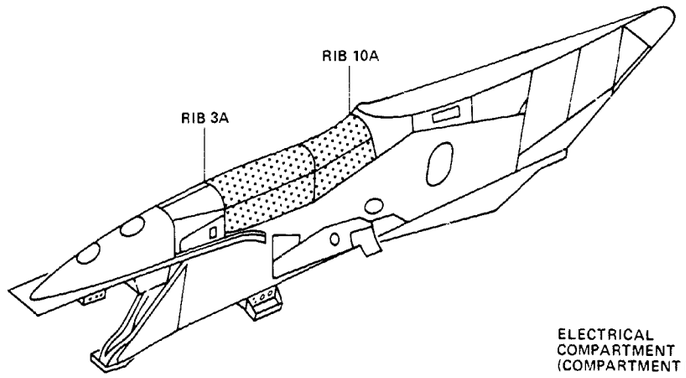
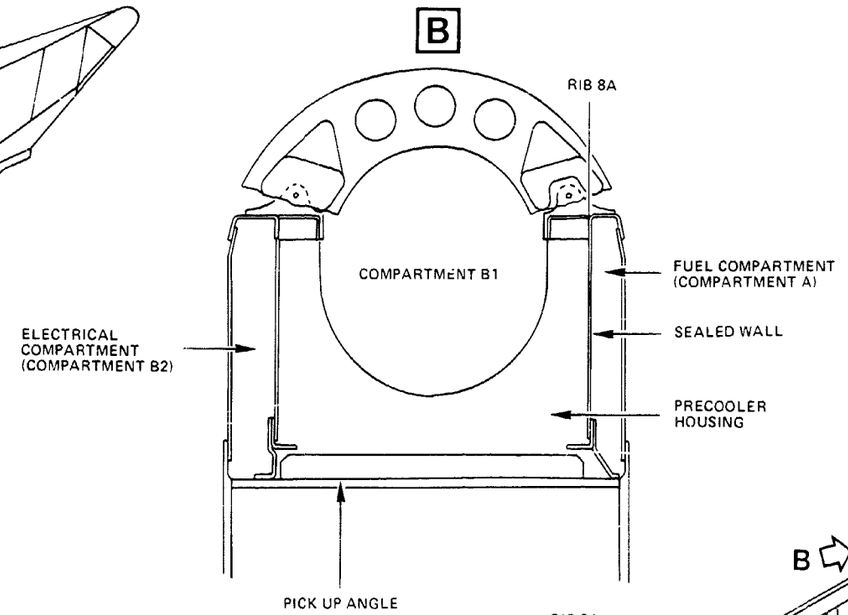
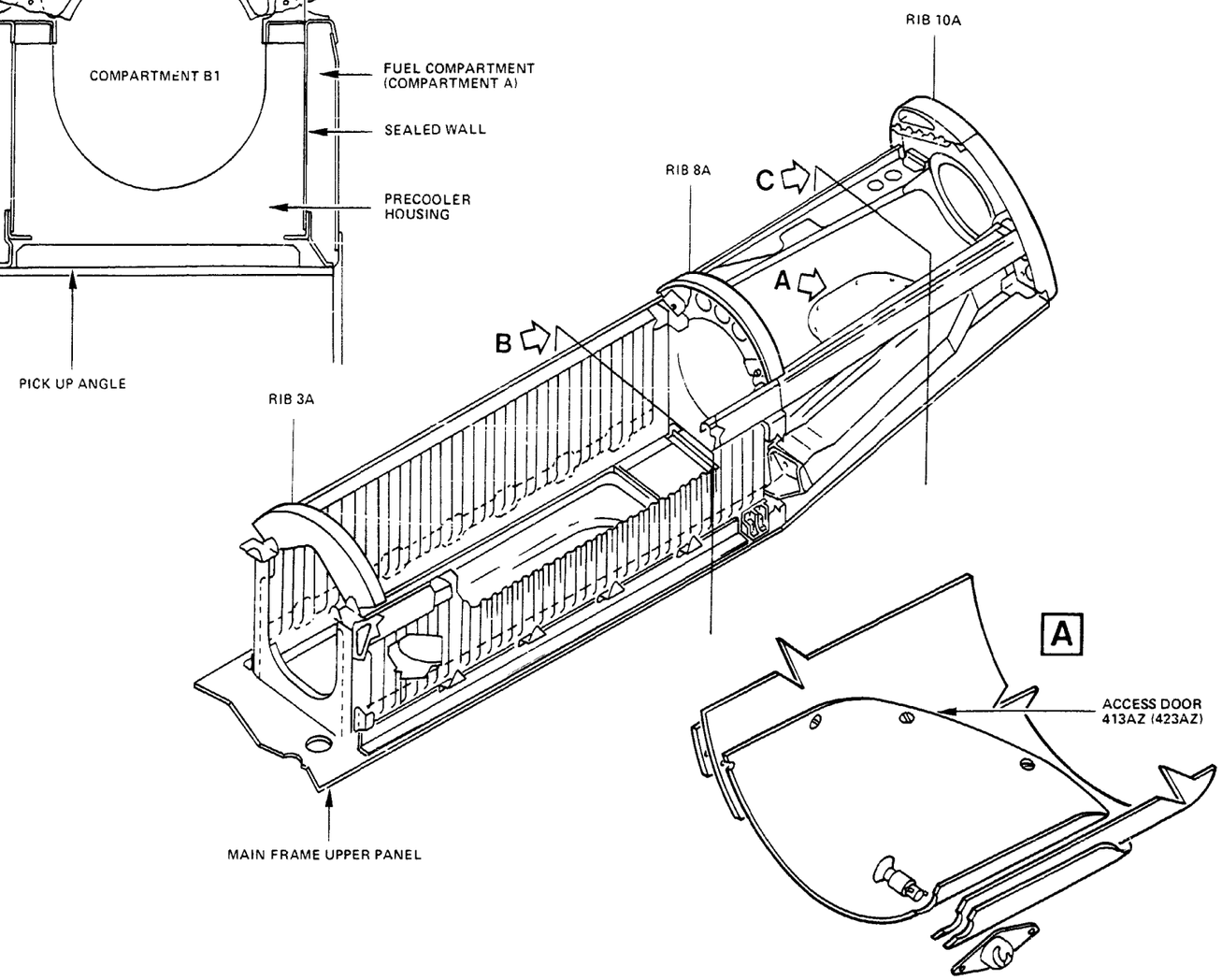
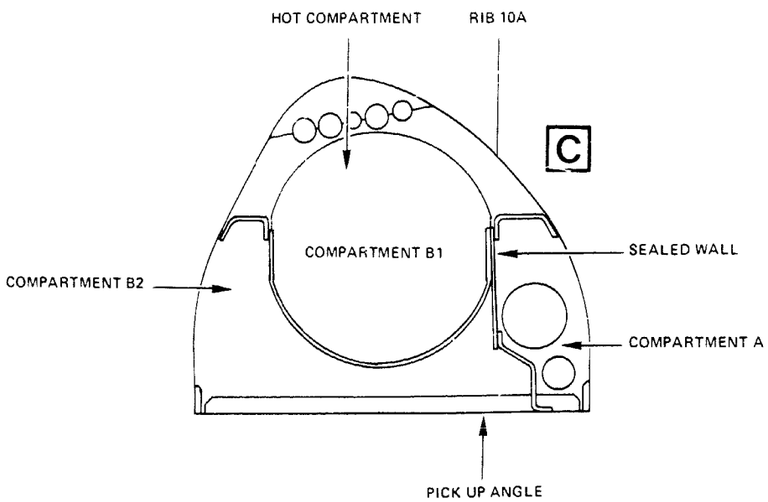
Side Skin Panel Between RIBs J08 and 10A
Figure 006









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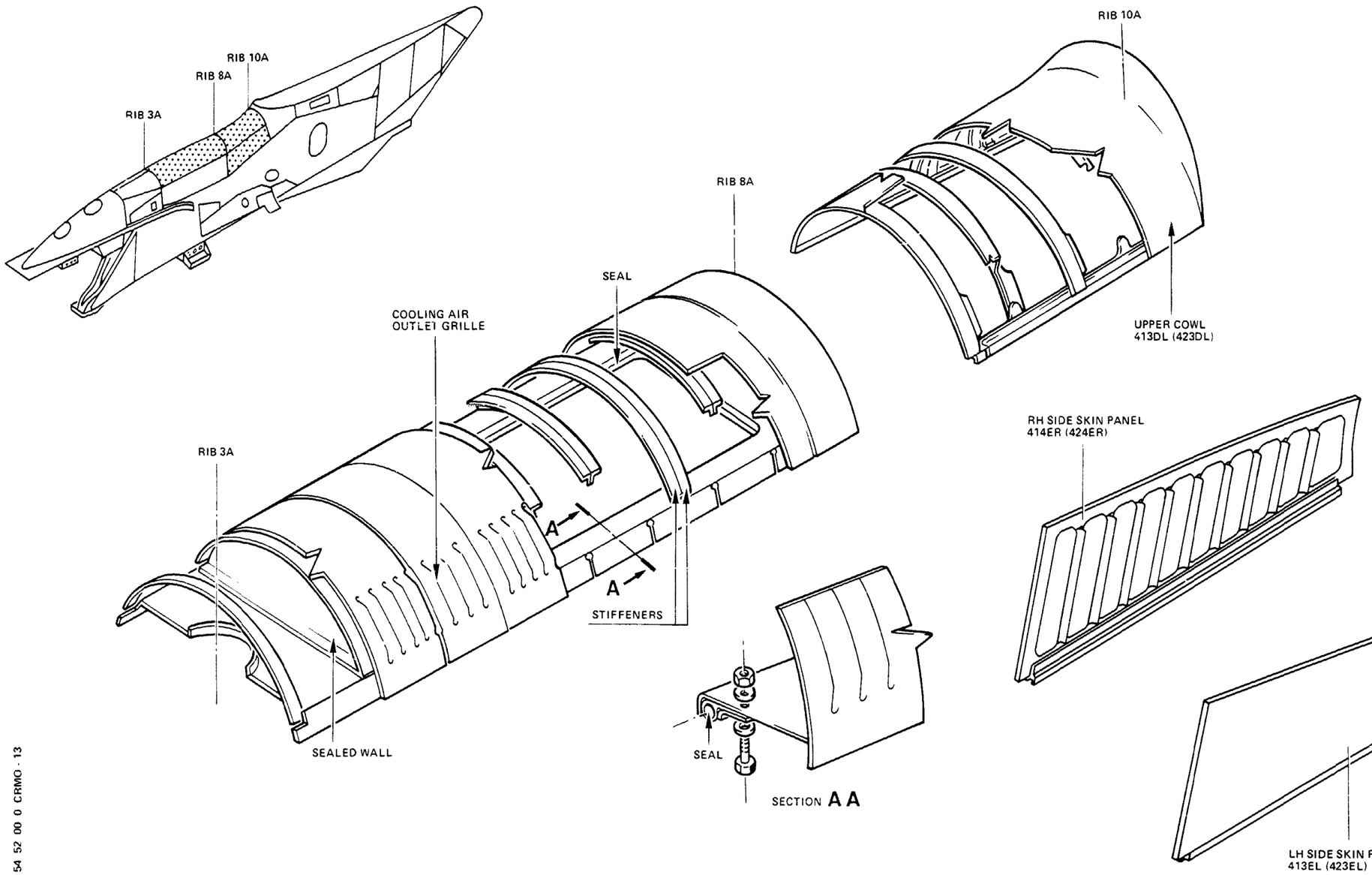
Forward Fairing Between RIBs 3A and 10A
Figure 007



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Side Skin Panels and Upper Cowls Between RIBs 3A and 10A
Figure 008

into a metallic shield which isolates it from the structure. The metallic shield is fitted with a door giving access to compartment B2, and thus facilitating removal of the secondary transmission pulley when necessary.

Access to compartment B1 is gained by means of a sheet metal cowl bolted to the structure.

Compartment B2 comprises :

- the electrical cables
- the mechanical part of the secondary transmission pulley
- the throttle control heating system.

Access is gained through a light alloy removable panel bolted to the structure.

At RIB10A compartment B2 has an outlet duct enabling the air from compartment B1 to be discharged. A temperature sensor calibrated at 200°C and installed on the outlet duct enables any overheat due to hot air bleed duct bursting to be rapidly detected.

1. General

The three main functions of the engine pylon forward fairing are to :
- provide an aerodynamic fairing to engine pylon.
- route and ensure protection of lines and components of various systems.
- separate the various systems for safety reasons.

2. Description

The forward fairing forward section is comprised of two sections structurally different :
- the cantilever structure
- structure between RIBS J08 and 10A.

(1)Cantilever structure

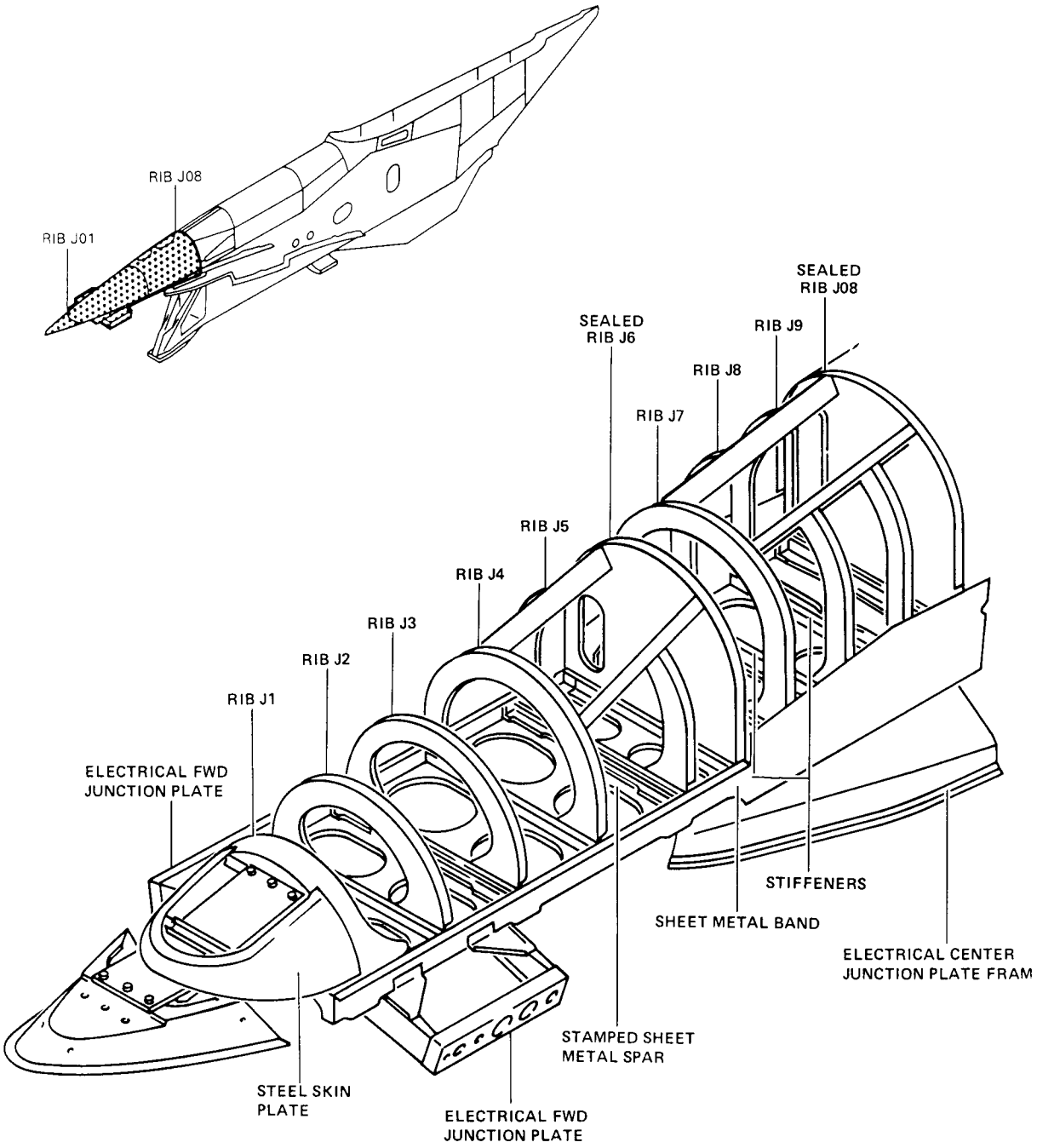
It is comprised of
(Ref. Fig. 001)

R - 10 stamped sheet metal ribs, each fitted on their lower section with
R a transversal stiffener made of folded sheet metal or machined steel
R - one stamped sheet spar, on which are attached transverse stiffeners
R - two bands attached on each side of the spar
R - one sheet metal spring attached to stiffener J01 presses a pressed
R sheet metal onto the nose cowl
R - two junction edgings which prolong engine cowl contour and are riveted
R to the spar.
R The spar is bolted to the pylon main structure.
R The cantilever structure provides an aerodynamic contour between engine
R nose cowl and pylon main frame. It enables the electrical and control
R cables to be routed to the engine.
R The cantilever structure is divided into two separate compartments :
R - the forward compartment is located between RIBs J1 and J6. It is
R provided with two electrical junction plates attached under the spar
R and enabling the forward engine-to-pylon, interface junctions to be
R achieved.
(Ref. Fig. 002)
This compartment encloses the engine electrical, throttle and reverse interlock electrical control cables.
- the aft compartment is located between RIBs J6 and J08. It is provided with an electrical junction box attached under the spar and enabling the center engine to pylon interface to be achieved
(Ref. Fig. 003)
This compartment encloses the electrical cables routed towards the three junction boxes and the engine throttle reverse interlock cables.

Each compartment has a door in its upper section giving access to the various cables.
Engine cowl hinge fittings are secured to the spar (Ref. 54-56-00).

(2)Auxiliary structure between RIBs J08 and 10A

It provides an aerodynamic contour between the cantilever structure and the wing leading edge and enables the routing of various system lines and cables.
The four main elements of this structure are RIBs J08, 3A, 8A and 10A which are attached to the upper panel of the main structure and divide



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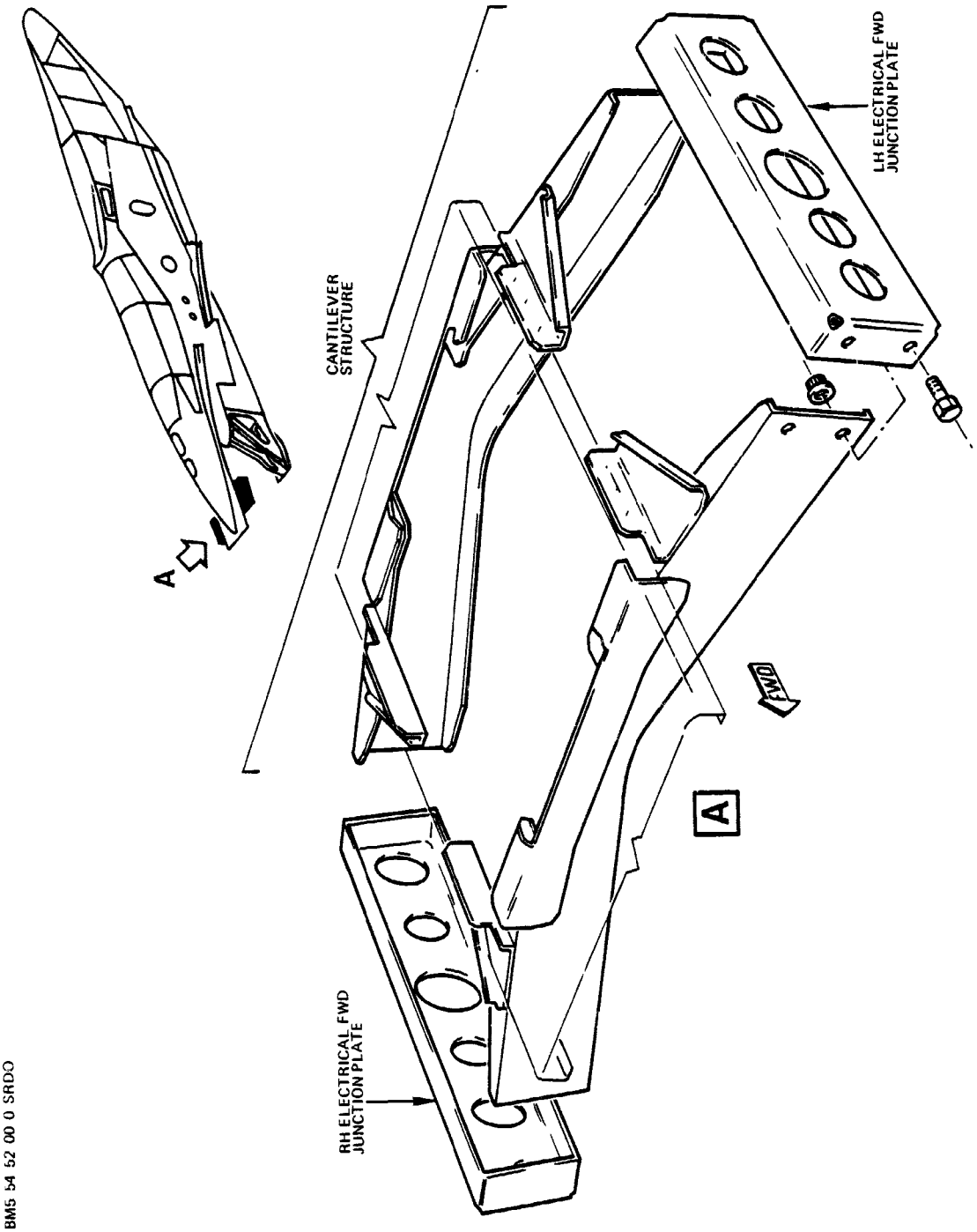
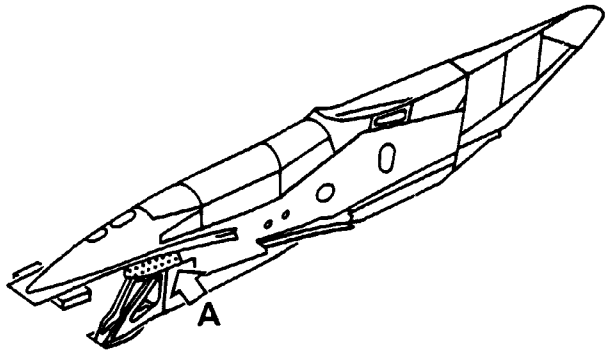
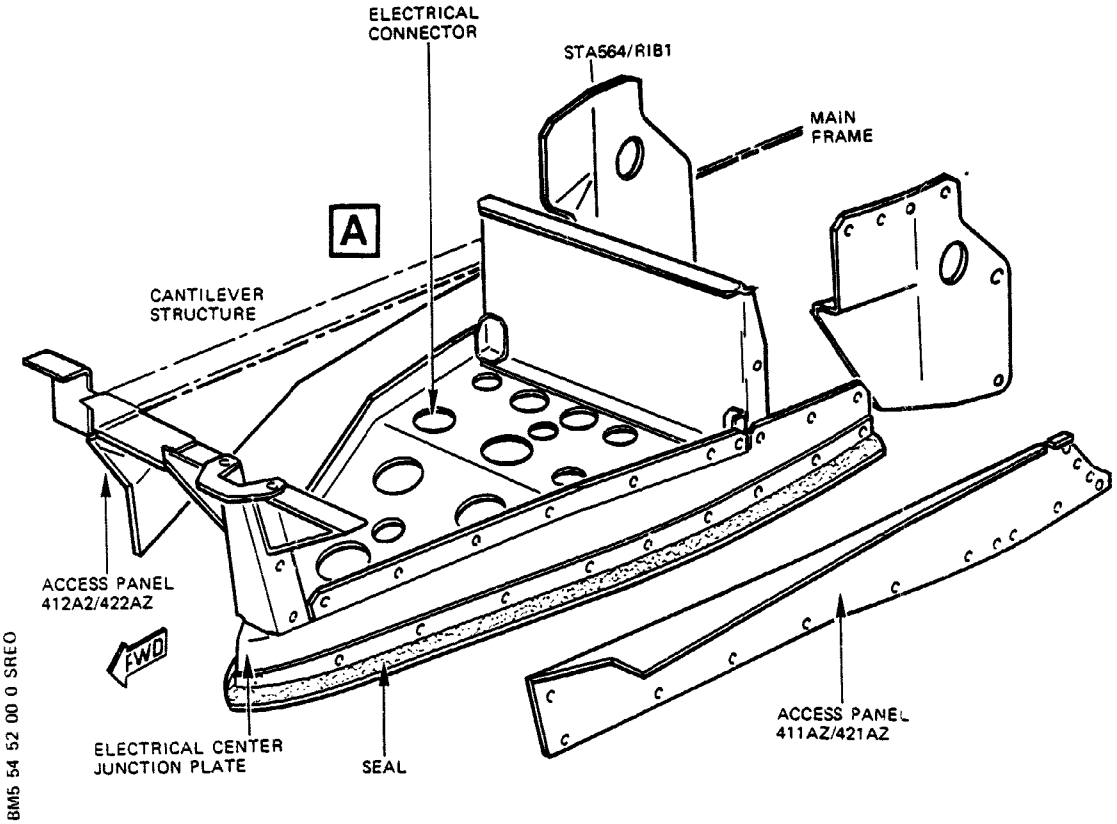
Cantilever Structure
Figure 001

R



Engine-to-Pylon Interface Forward Electrical Junction Boxes
Figure 002





Engine-to-Pylon Interface Center Electrical Junction Box
Figure 003

the auxiliary structure into three sections.

(a)Section between RIBs J08 and 3A

(Ref. Fig. 004)

(Ref. Fig. 005)

This section is divided into three compartments, B1 and two compartments B2 by two metallic panels which are parallel to the pylon longitudinal axis and secured at their ends to RIBs J08 and 3A.

Compartment B1 comprises :

- the precooler hot air bleed duct
- the bleed valve.

Compartment B1 is fitted with two pressure relief doors calibrated to 200 mbars and designed to open in case of hot air bleed duct bursting Between RIB J08 and RIB 3A, access to zone B1 is gained by removing the pressure relief doors. Compartment B2 on pylon right side houses the electrical cables routed toward the cantilever sructure. Compartment B2 on pylon left side houses the throttle and thrust reverser interlock electrical cables.

The cables are run via a sealed bulkhead feedthrough. Access to the system is gained through light alloy removable panels.

(b)Section between RIBs 3A and 8A

(Ref. Fig. 006)

This section is divided into three compartments in the same way as the previous section.

Compartment B2 on pylon left side comprises :

- throttle and reverse interlock electrical cables.

Access to these systems is gained by means of a light alloy removable panel bolted to the structure.

Compartment B1 encloses the precooler. A bolted removable cowl hermetically seals the precooler and is used as an outlet duct for the precooler cooling air in its upper section.

(Ref. Fig. 007)

(Ref. Fig. 008)

Compartment B2 on pylon right side comprises electrical cables. Access is gained through a removable panel.

(c)Section between RIBs 8A and 10A

The separation is the same as for the two other compartments.

Compartment B2 on pylon left side comprises :

- throttle and reverser interlock electrical cables.

Access to the system is gained through a light alloy removable panel bolted to the structure.

Compartment B1 comprises :

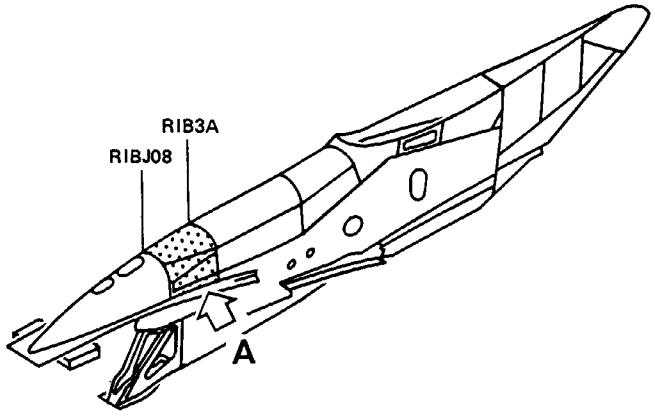
- the bleed air duct running between the precooler and the wing. As the air blowing inside is at high temperature, the duct is routed into a metallic shield which isolates it from the structure. The metallic shield is fitted with a door giving access to compartment B2.

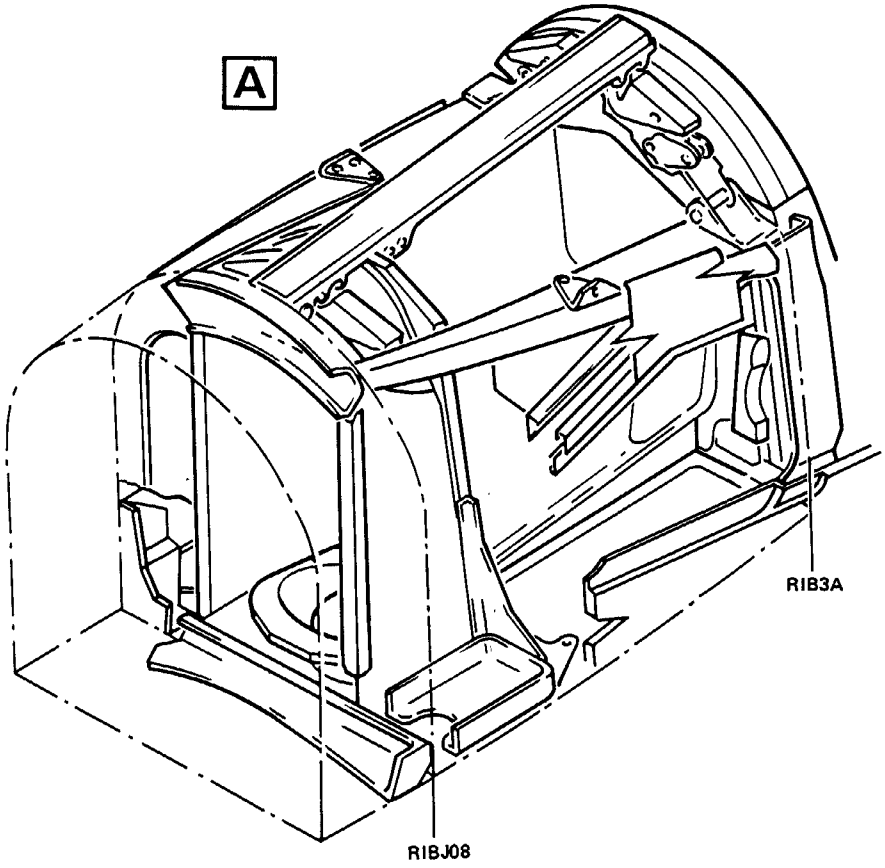
Access to compartment B1 is gained by means of a sheet metal cowl bolted to the structure.

Compartment B2 on pylon right side comprises :

- the electrical cables

Access is gained through a light alloy removable panel bolted to the





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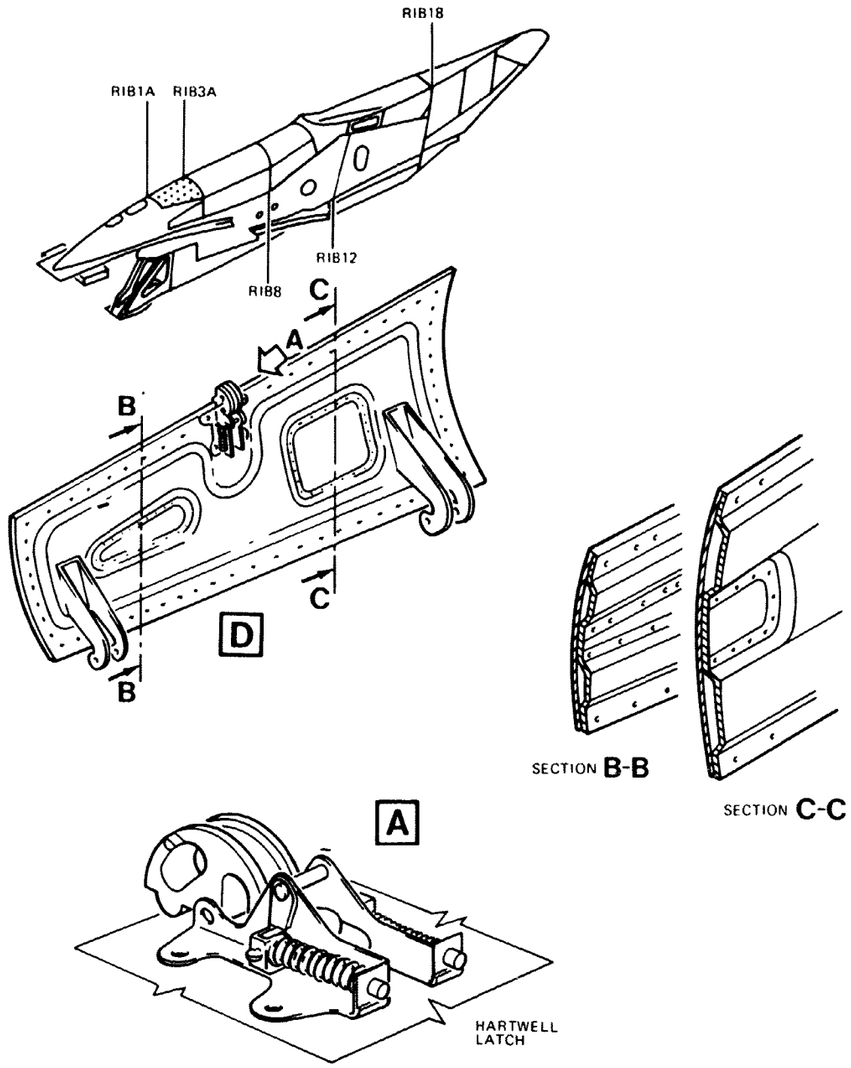
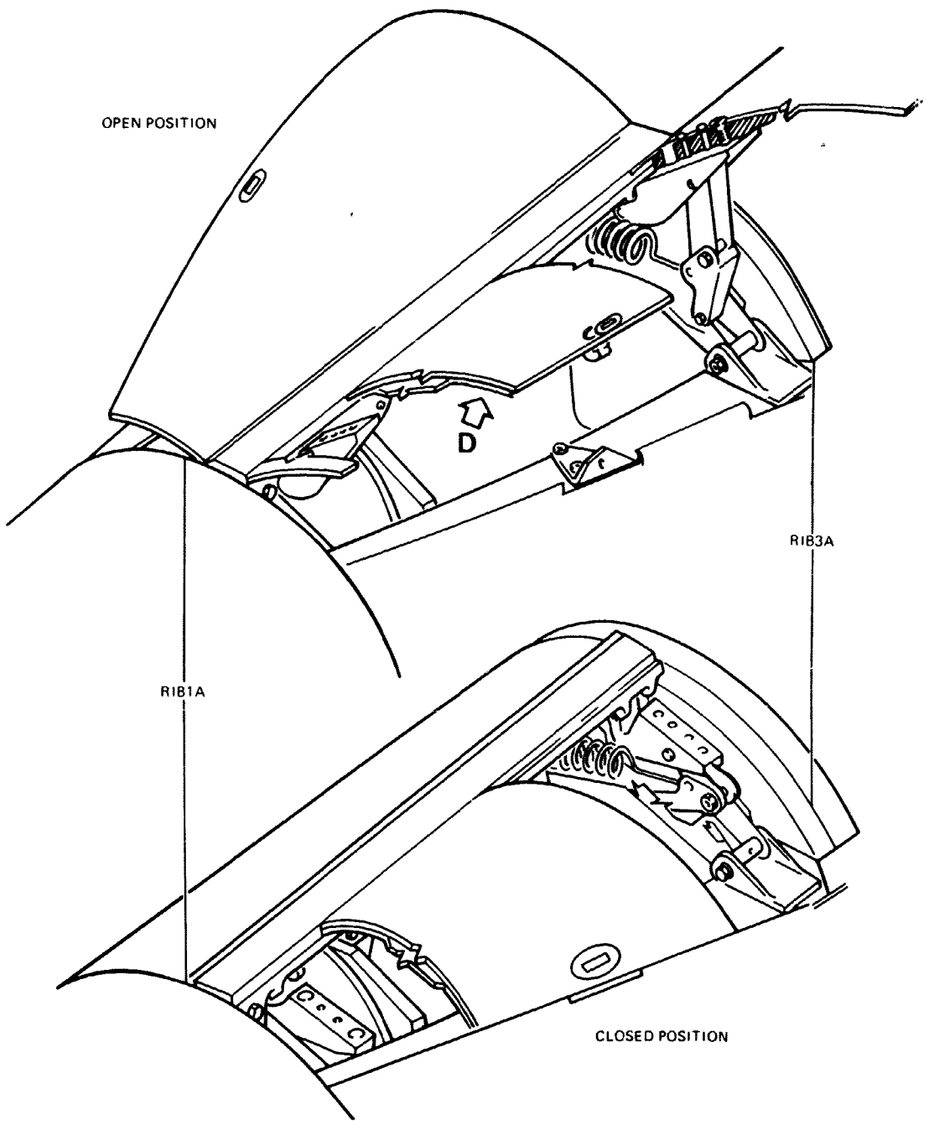
Auxiliary Structure Between RIBs J08 and 3A
Figure 004





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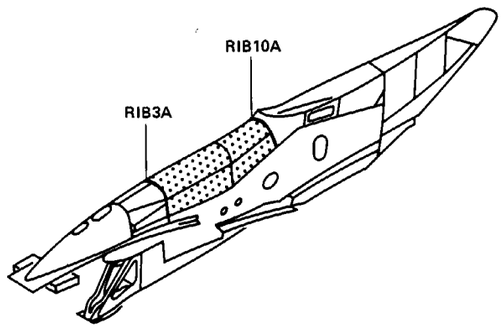
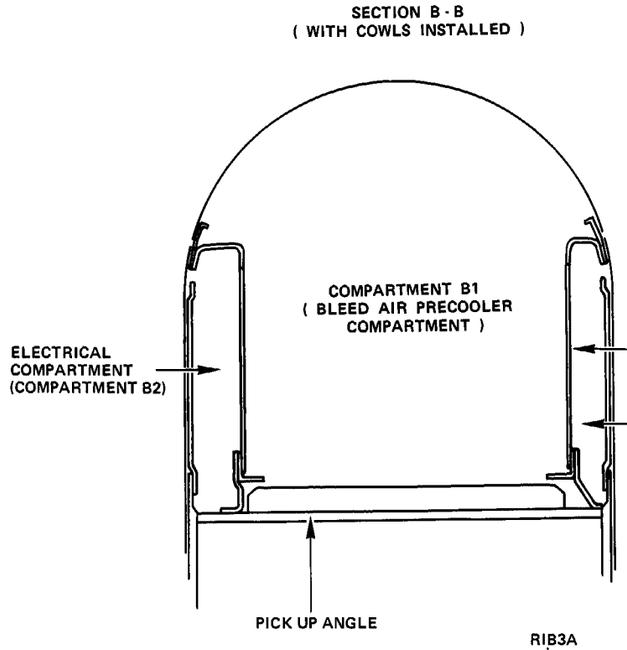
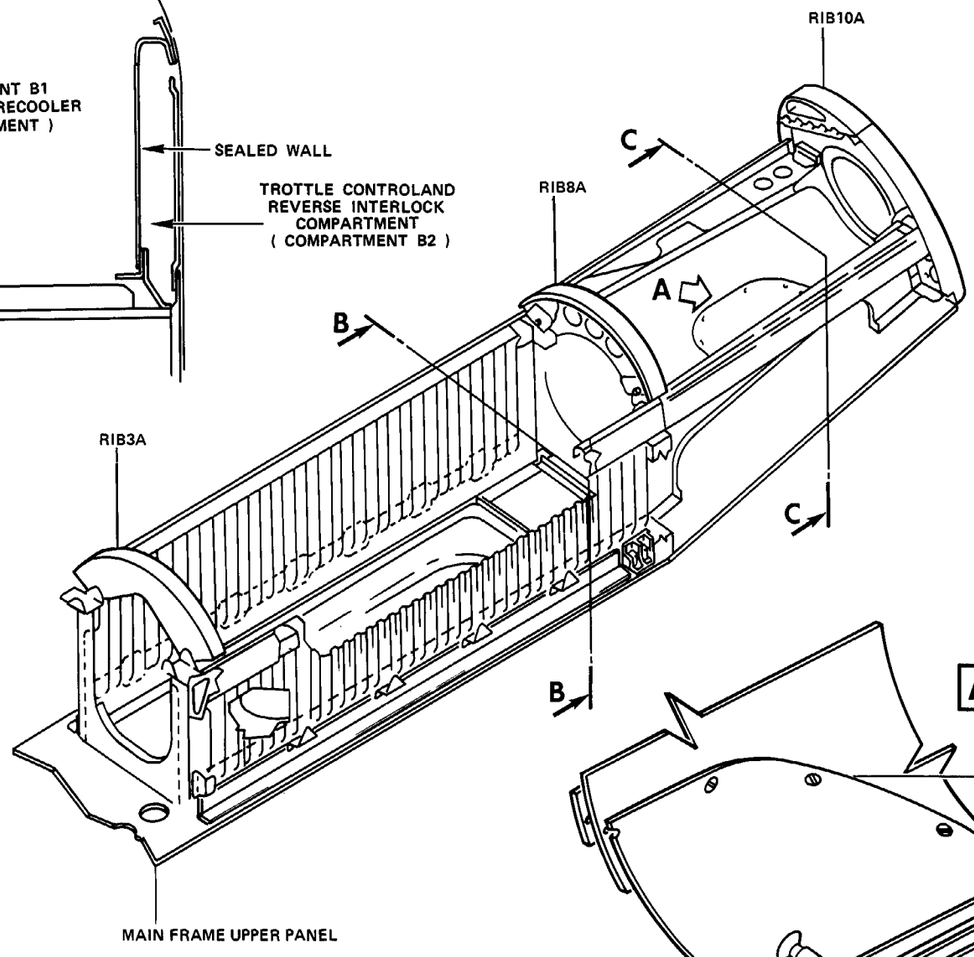
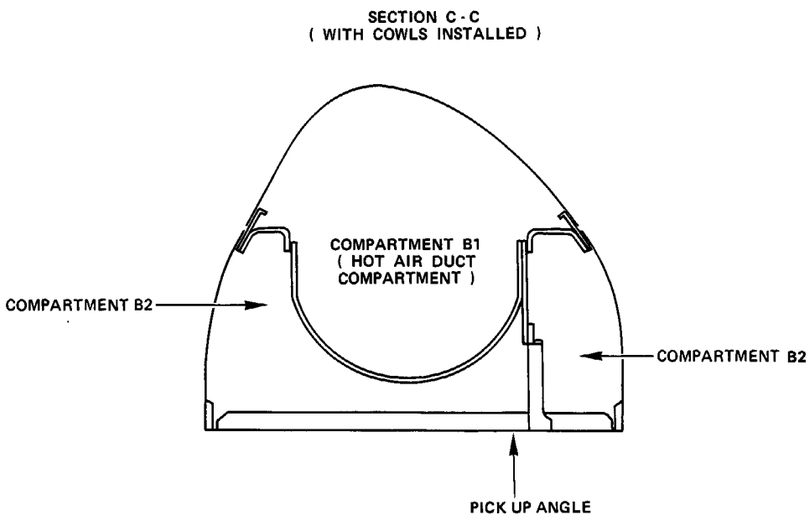
Forward Pressure Relief Doors
Figure 005









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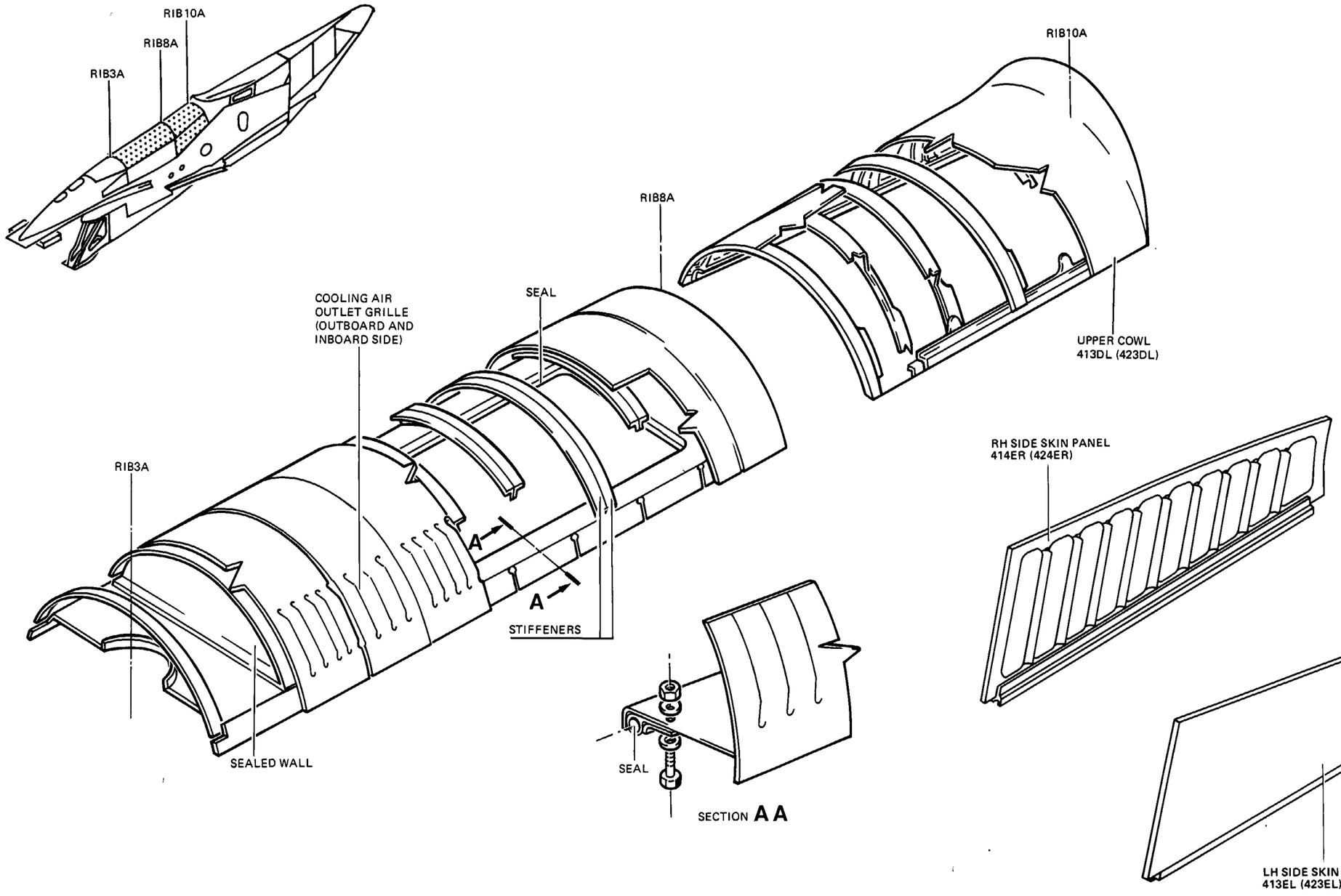
Auxiliary Structure Between RIBs 3A and 10A
Figure 006



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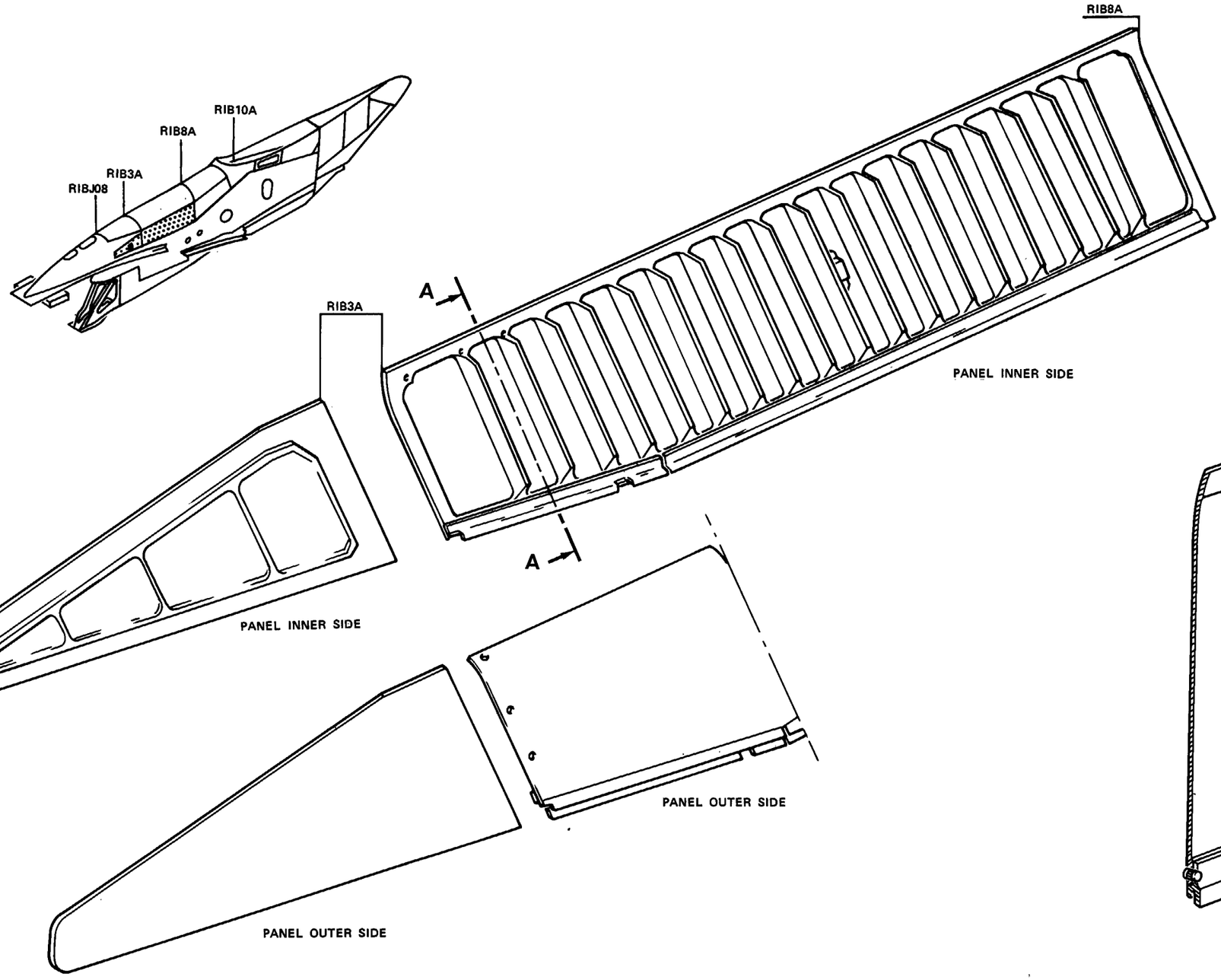
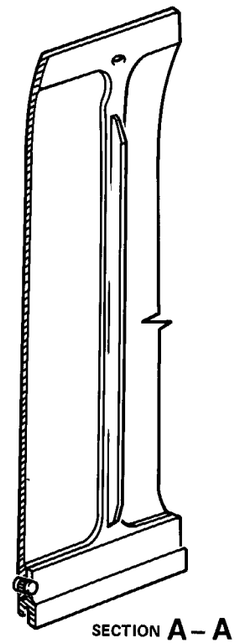
Side Skin Panels and Upper Cowls Between Ribs3A and 10A
Figure 007





Side Skin Panels Between RIBs J08 and 8A
Figure 008

structure.
At RIB10A compartment B2 on pylon right side has an outlet duct enabling the air from compartment B1 to be discharged. A temperature sensor calibrated at 200°C and installed on the outlet duct enables any overheat due to hot air bleed duct bursting to be rapidly detected.

R 1. Inspection of the Forward Fairing

A. Equipment and Materials

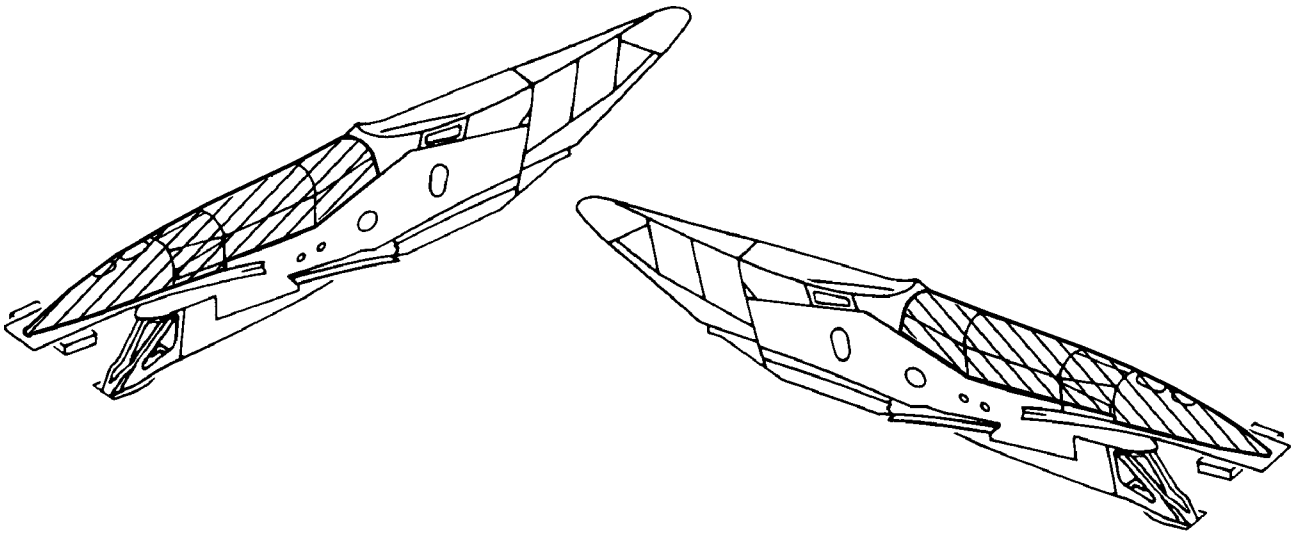
ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice

R Referenced Procedure
R - SRM/54-50-00, P. Block 101

B. Procedure

(1)Job set-up
(a)Install access platform.
(b)Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

R (2)Inspection (Ref. Fig. 601,)
R (a)Do an inspection of the forward fairing.
R (b)Make sure that there is no damage (cracks, nicks, scores, dents, ...) (Ref. SRM/54-50-00, P. Block 101).
R
R (3)Close-up
(a)In flight compartment, remove warning notice from flap and slat control lever.
(b)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(c)Remove access platform.



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Forward Fairing - Inspection Area
Figure 601

R

1. Inspection of the Forward Fairing

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice

Referenced Procedure
- SRM/54-50-00, P. Block 101

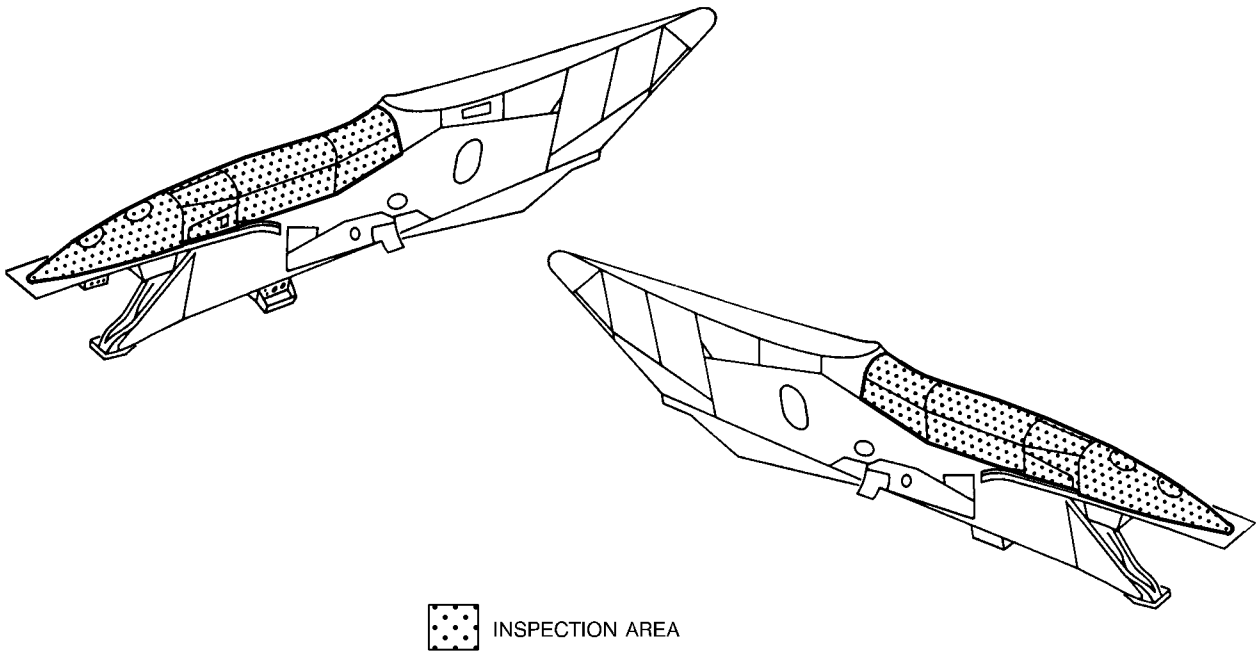
B. Procedure

(1)Job set-up
  (a)Install access platform.
  (b)Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

(2)Inspection
  (Ref. Fig. 601)
  (a)Do an inspection of the forward fairing.
  (b)Make sure that there is no damage (cracks, nicks, scores, dents, ...) (Ref. SRM/54-50-00, P. Block 101).

(3)Close-up

  (a)In flight compartment, remove warning notice from flap and slat control lever.
  (b)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
  (c)Remove access platform.



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Forward Fairing - Inspection Area
Figure 601

PRESSURE RELIEF DOORS - REMOVAL/INSTALLATION

1. Removal/Installation of forward pressure relief doors

A. Reason for the Job

Removal of pressure relief doors enables access to air bleed ducts and pneumatic system overpressure valve.

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)

NOTE : Removal/Installation procedure is identical for both engine pylons.

C. Procedure

(1)Job set-up

(a)Position access platform.

R (b)Remove skin panel 413BL (423BL)

(c)Open the two pressure relief doors.

(2)Removal

NOTE : Take all necessary precautions during removal/installation to prevent spacer (9) and nuts (8) from falling into main frame bottom and to collect them easily.

(a)Remove and retain bolt (1), spacer (9) and nut (8).

(b)Remove and retain two bolts (2) and nuts (10).

(c)Remove and retain four bolts (7) and nuts (6) (symmetrical assembly with respect to small spar).

(d)Remove and retain bolts (5), spacers (4) and nuts (3).

(e)Remove small spar and door assembly.

(3)Check

(a)Carry out a visual check of pressure relief doors to make certain that they are free of cracks, traces of wear or distortion.

(b)Check condition of automatic opening mechanism and hinge fittings.

(c)Check Hartwell latches for correct operation.

(d)Check condition of junction parts and spacers.

(4)Installation

(a)Install small spar and door assembly between RIB1 and RIB3.

(b)Install two bolts (7) and nuts (6).

(c)Install two bolts (2) and nuts (10).

(d)Install two spacers (4), bolts (5) and nuts (3).

(e)Install spacer (9), bolt (1) and nut (8).

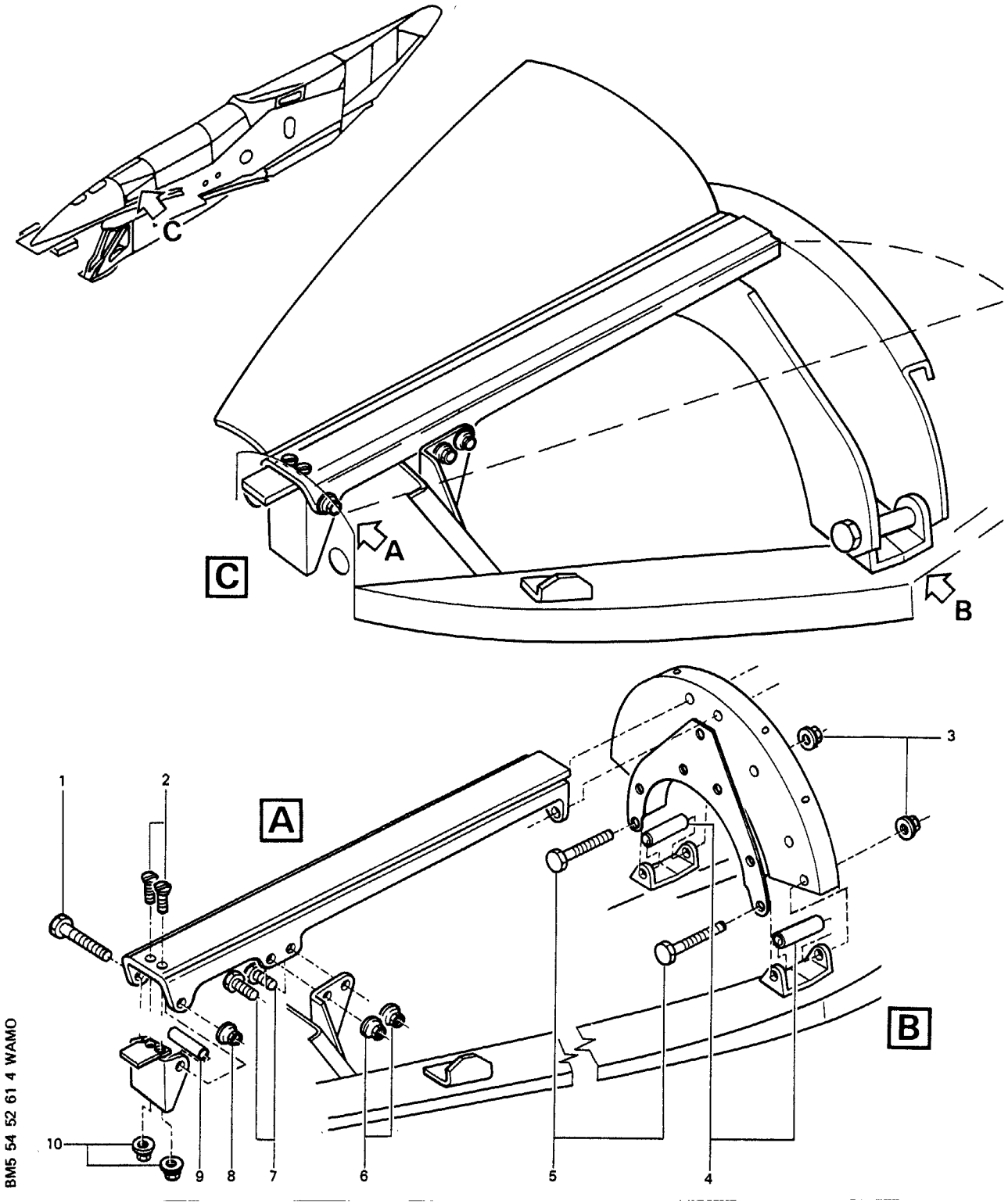
(5)Close-up

(a)Open and close pressure relief doors several times to make certain that assembly is correct.

R (b)Install skin panel 413BL (423BL).

(c)Remove access platform.

(Ref. Fig. 401)



FWD Pressure Relief Doors - Removal/Installation
Figure 401

1. Removal/Installation of Forward Pressure Relief Doors

A. Reason for the Job

Removal of pressure relief doors enables access to air bleed ducts and pneumatic system overpressure valve.

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)

NOTE : Removal/Installation procedure is identical for both engine pylons.

C. Procedure

(1)Job set-up

(a)Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
133VU	ENGINES/ENG2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG1 & 2/START CTL & WARN	1KG	335/R68

(b)Position access platform.

(c)Remove skin panel 413GL (423GL)

(d)Open the two pressure relief doors.

(2)Removal

(Ref. Fig. 401)

NOTE : Take all necessary precautions during removal/installation to prevent spacer (9) and nuts (8) from falling into main frame bottom and to collect them easily.

(a)Remove and retain bolt (1), spacer (9) and nut (8).

(b)Remove and retain two bolts (2) and nuts (10).

(c)Remove and retain four bolts (7) and nuts (6) (symmetrical assembly with respect to small spar).

(d)Remove and retain bolts (5), spacers (4) and nuts (3).

(e)Remove small spar and door assembly.

(3)Check

(a)Carry out a visual check of pressure relief doors to make certain that they are free of cracks, traces of wear or distortion.

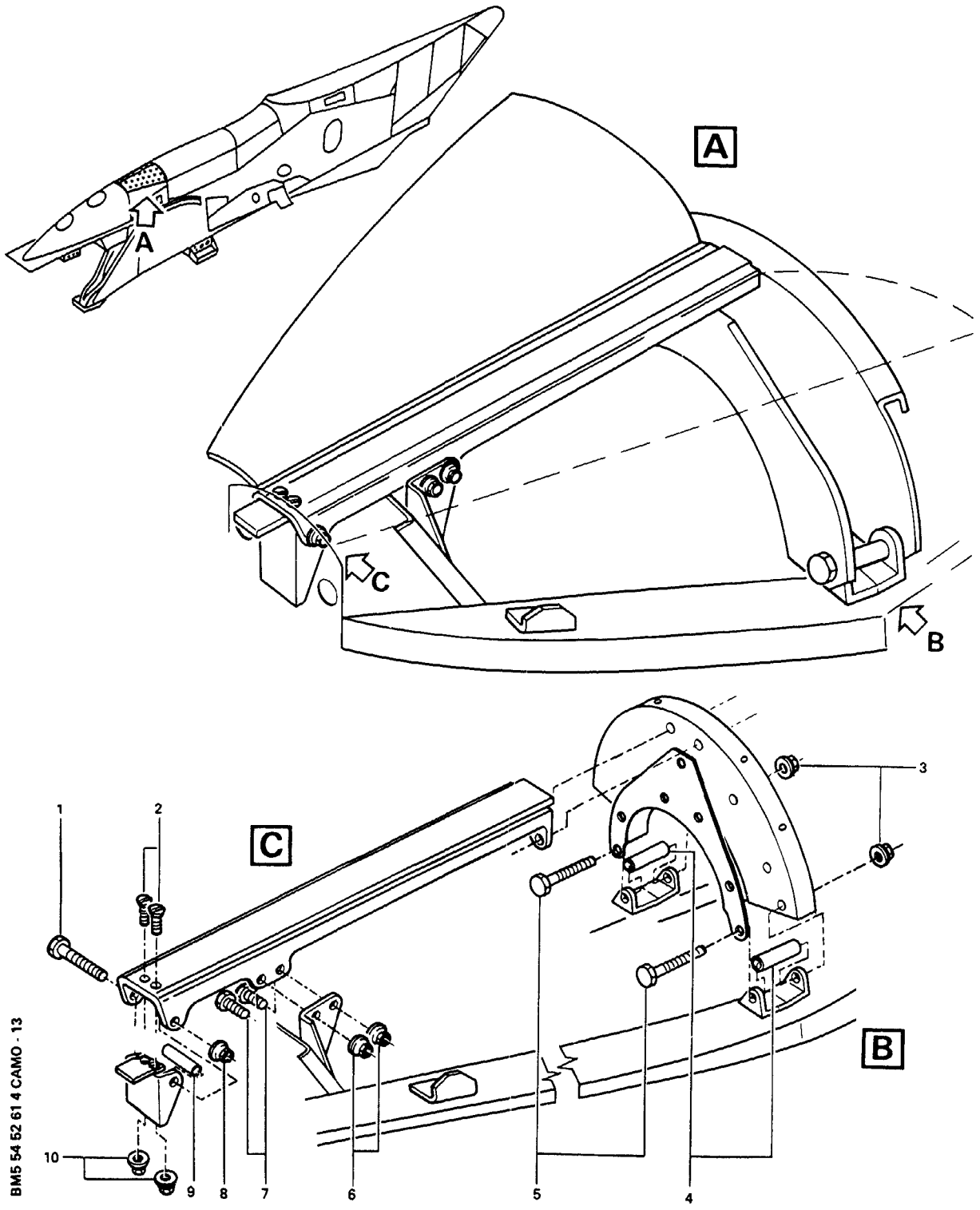
(b)Check condition of automatic opening mechanism and hinge fittings.

(c)Check Hartwell latches for correct operation.

(d)Check condition of junction parts and spacers.

(4)Installation

CAUTION : THE ASSOCIATION OF INCONEL BOLTS AND NUTS WITH STEEL BOLTS AND NUTS (CADMIUM PROTECTED) IS PROHIBITED.



Doors
Figure 401

(a)Install small spar and door assembly between RIB1 and RIB3.
(b)Install two bolts (7) and nuts (6).
(c)Install two bolts (2) and nuts (10).
(d)Install two spacers (4), bolts (5) and nuts (3).
(e)Install spacer (9), bolt (1) and nut (8).

(5)Close-up
(a)Open and close pressure relief doors several times to make certain that assembly is correct.
(b)Install skin panel 413GL (423GL).
(c)Remove access platform.
(d)Remove safety clips and tags and close circuit breakers 1JH, 2JH, 1KG, 1KM and 2KM.

PYLON-TO-WING CENTER FILLETS - GENERAL

1. General

The center section of the auxiliary structure is between RIBs 10A and 18A and provides :

- an aerodynamic contour between the pylon main frame and wing under surface
- routing and protection of fuel line and bleed air precooler duct.

2. Description

The center section consists in :

- light alloy gussets attached to the upper panel of the main frame LH and RH sides between RIBs 12A and 18A.
  (Ref. Fig. 001)
- transverse stiffeners attached to the upper panel of the main frame and which connect and stiffen the LH and RH gussets located in the same transverse plan
- fillets bolted to the gussets. The fillets are made up of a honeycomb web enclosed in epoxy impregnated aramid fiber layers.
  The fillets are fitted with seals providing an aerodynamic profile to the pylon-to-wing under surface junction.

R (Ref. Fig. 002)

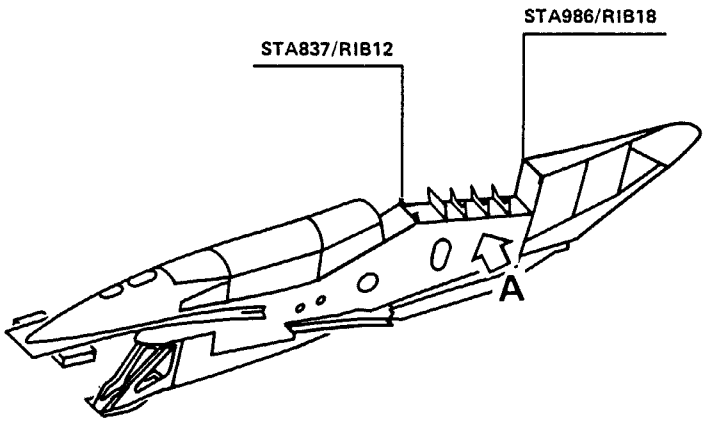
The center section comprises :

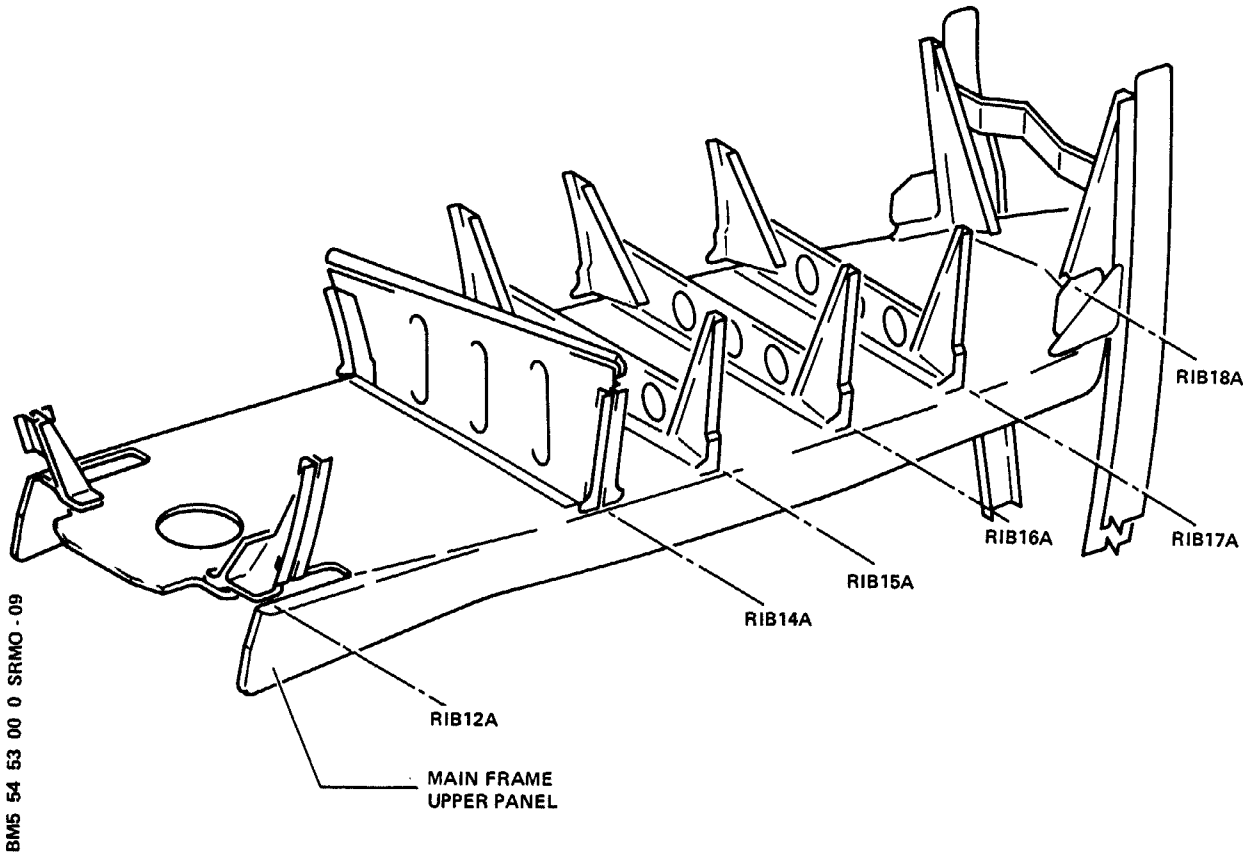
- The throttle and thrust reverser interlock electrical cables.
- the fuel line
- the bleed air duct
- the pressure transmitters and associated lines
- the electrical cables associated to the fire extinguisher bottles.

The auxiliary structure center section comprises a transverse sealed wall which forms RIB14 A.

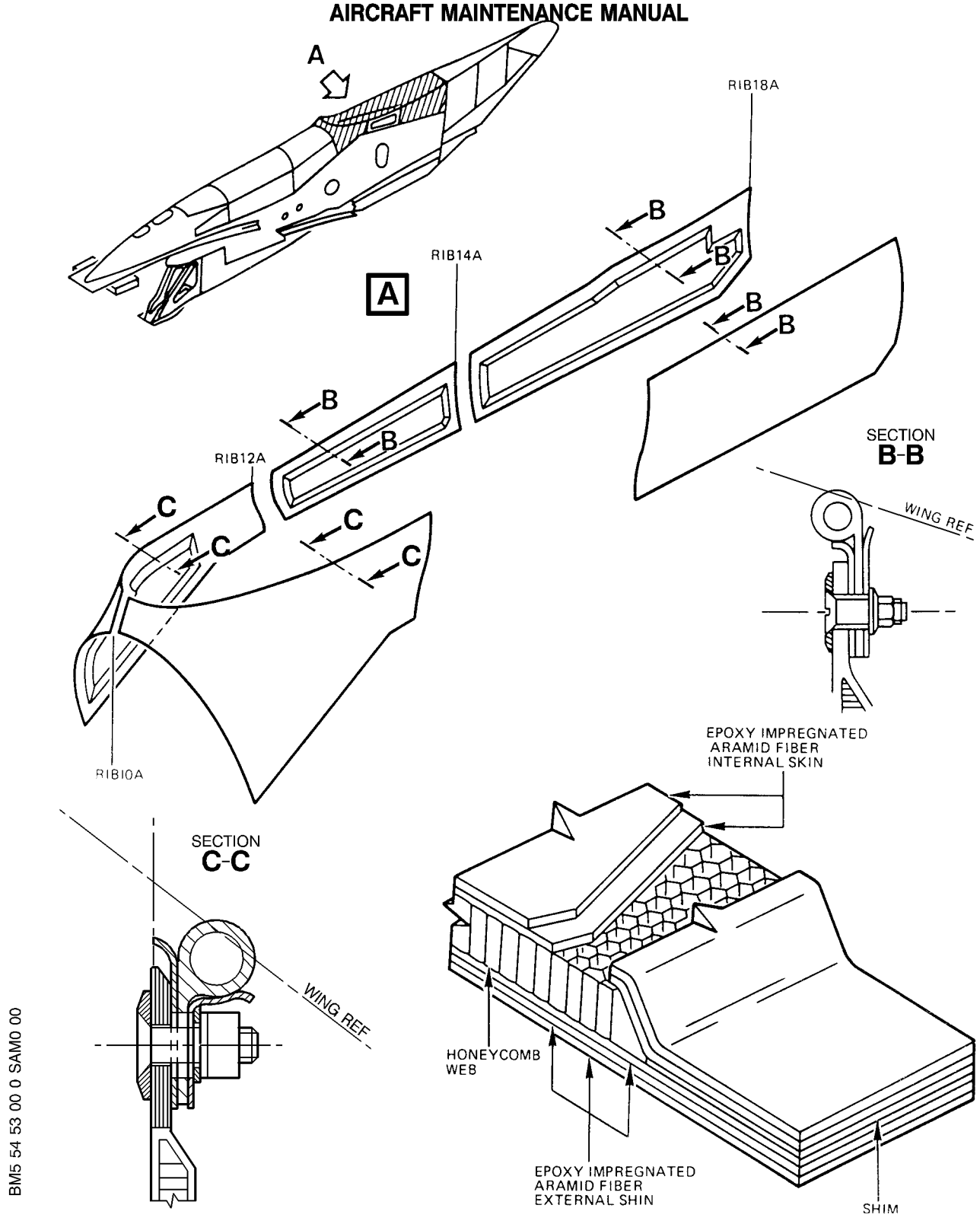
Between RIBs 12A and 14A, the structure is fitted on the outboard side with a pressure relief door calibrated to 200 mbars, so that any damage due to bleed air duct bursting at wing junction may be reduced.

(Ref. Fig. 003)





Center Section Frame
Figure 001



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Center Section Fillets
Figure 002

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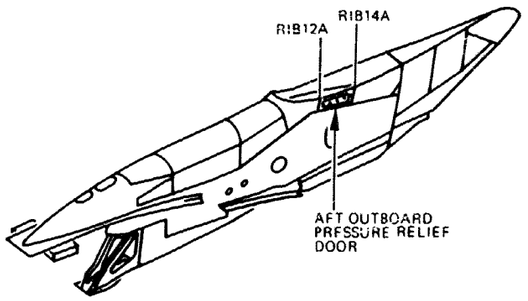
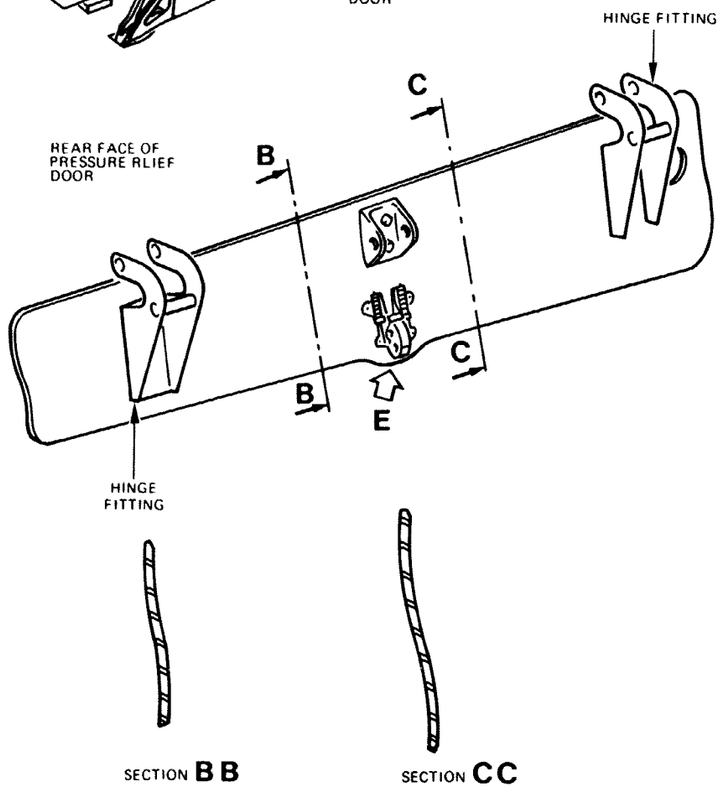
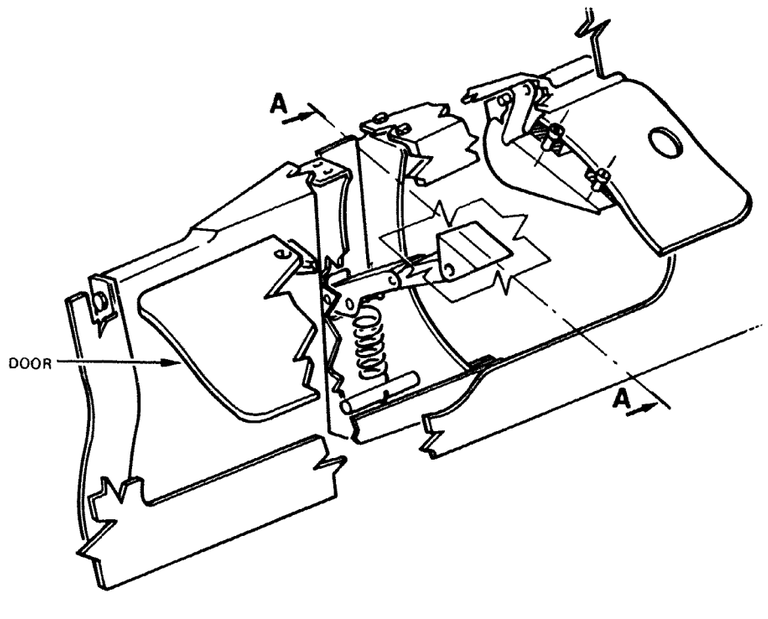
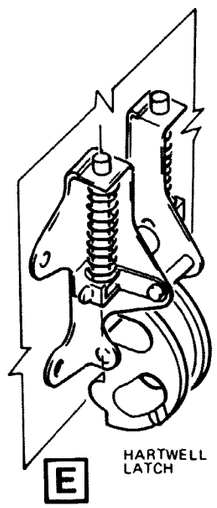
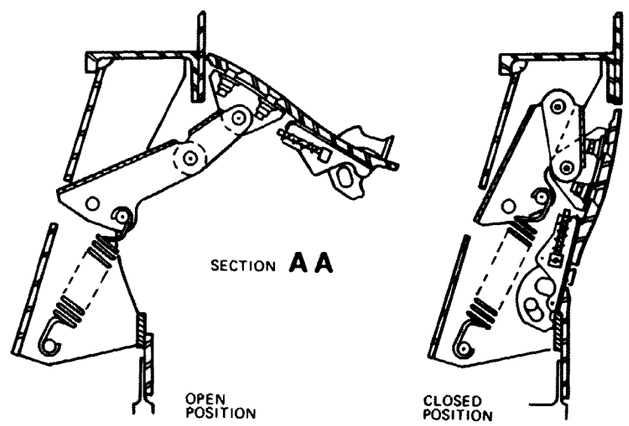










BAMS 54 53 00 0 SRPO

Aft Pressure Relief Door
Figure 003

PYLON-TO-WING CENTER FILLETS - DESCRIPTION AND OPERATION

1. General

The center section of the auxiliary structure is between RIB 10A and the aft fairing and provides :

- an aerodynamic contour between the pylon box frame and wing under surface
- routing and protection of fuel line and bleed air precooler duct.

2. Description

The center section consists in :

- light alloy gussets attached to the upper panel of the pylon box L and R sides between RIBs 12 and 18.
  (Ref. Fig. 001)
- transverse stiffeners attached to the upper panel of the pylon box and which connect and stiffen the L and R gussets located in the same transverse plan.
- fillets bolted to the gussets. The fillets are made up of a honeycomb web enclosed in epoxy impregnated aramid fiber layers.
  The fillets are fitted with seals providing an aerodynamic profile to the pylon-to-wing under surface junction.

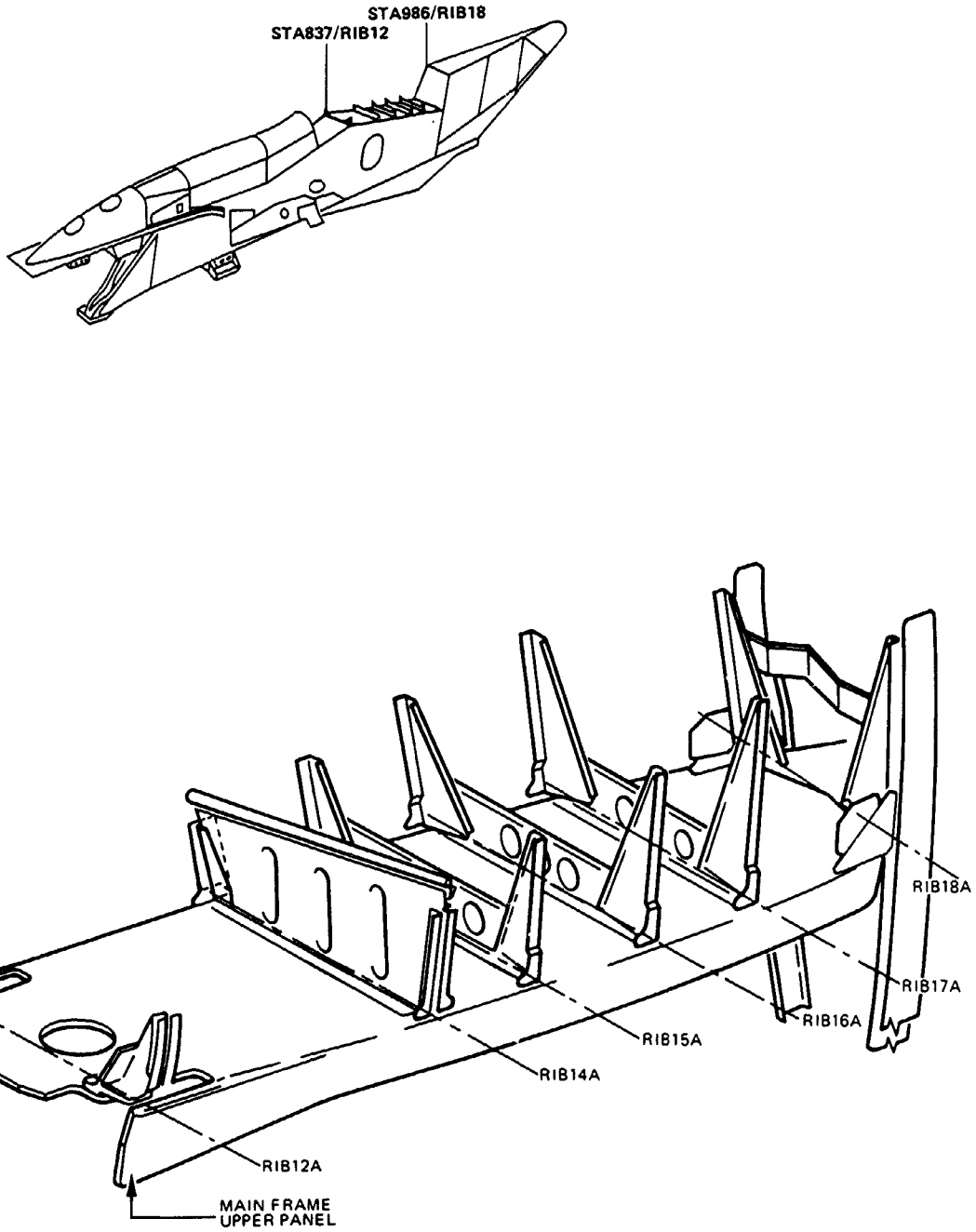
R (Ref. Fig. 002)

The center section comprises :

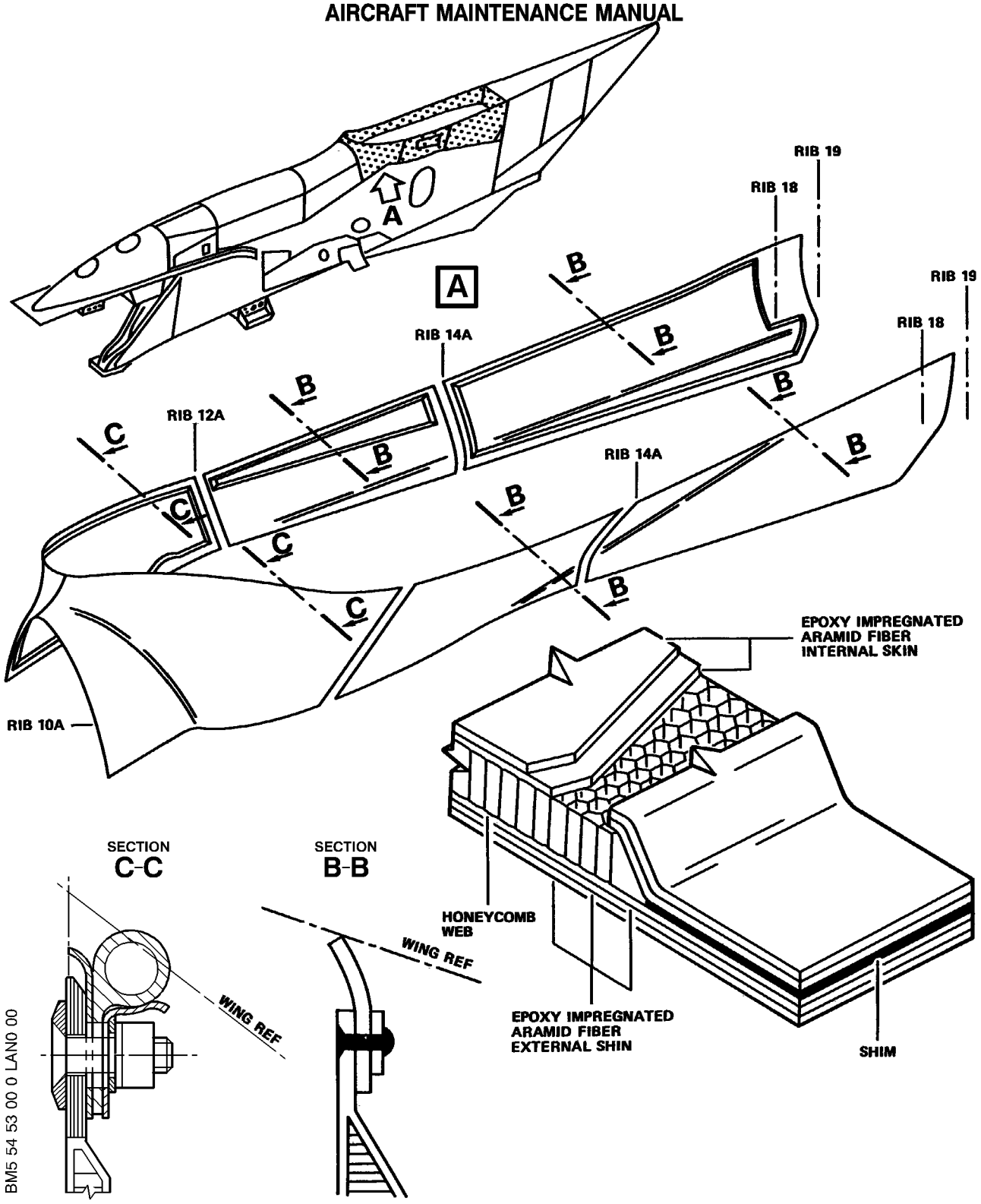
- throttle control secondary transmission assembly
- the fuel line
- the bleed air duct
- the pressure transmitters and associated lines
- the electrical cables associated to the fire extinguisher bottles.

The auxiliary structure center section comprises a transverse sealed wall at level of RIB14A.

Between RIBs 12A and 14A, the structure is fitted on the outboard side with a pressure relief door calibrated to 200 mbars, so that any damage due to bleed air duct bursting at wing junction may be reduced.
(Ref. Fig. 003)



Center Section - Frame
Figure 001



Center Section Fillets
Figure 002

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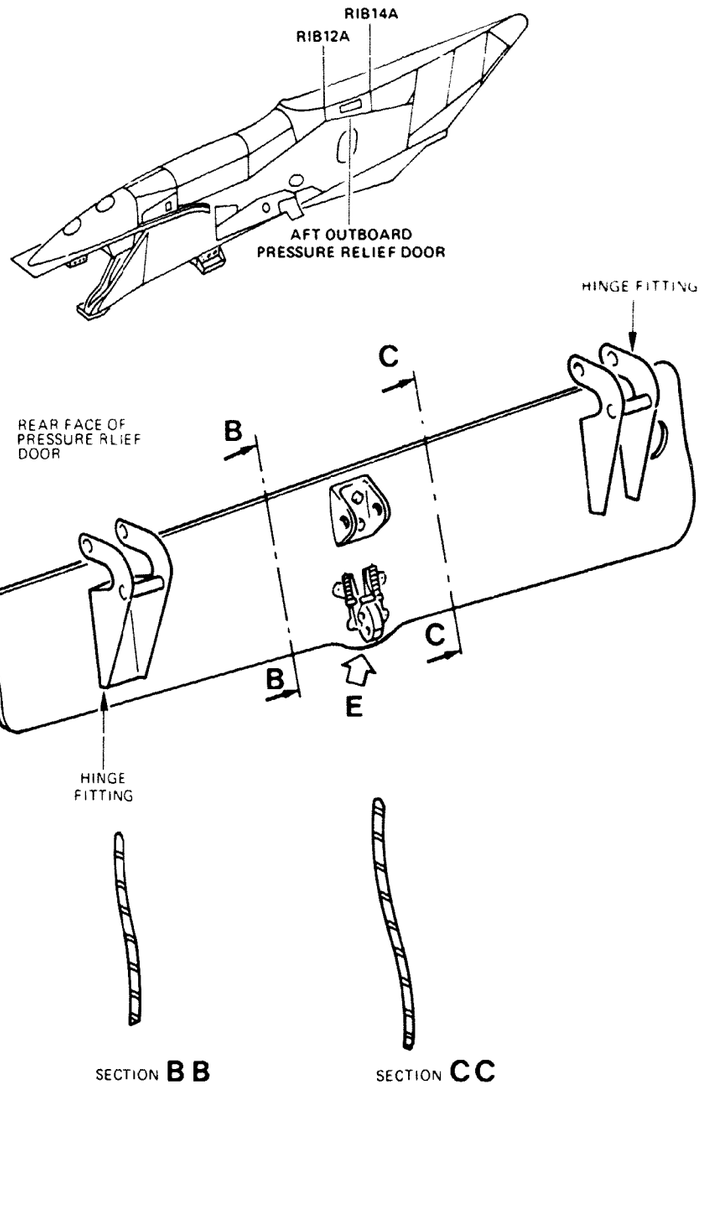
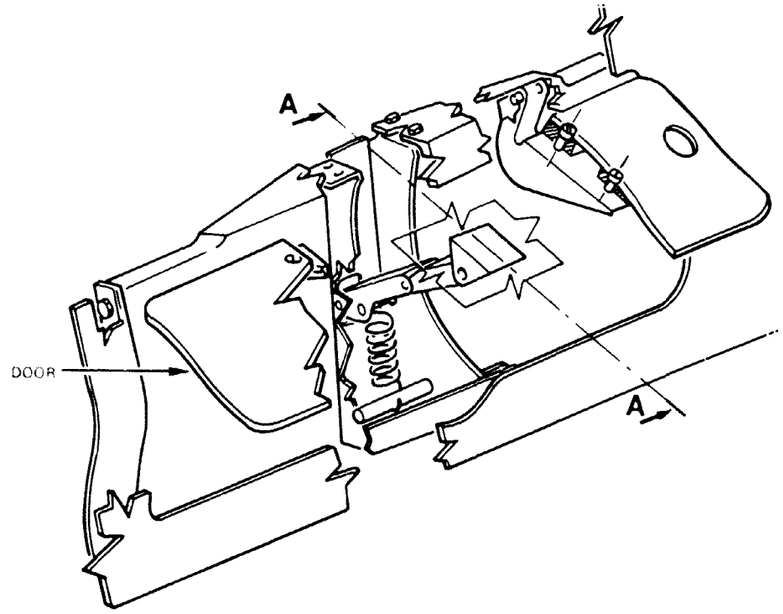
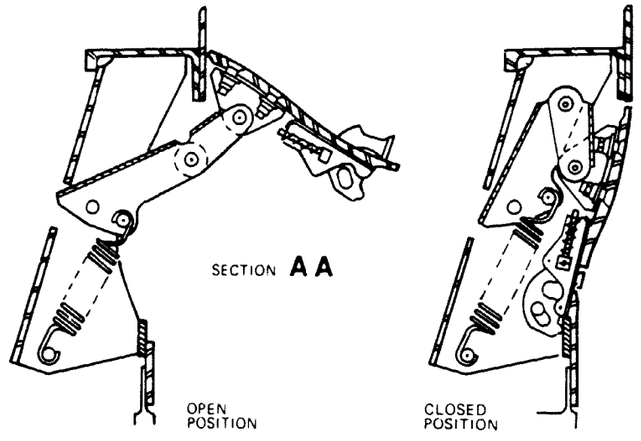






BM5 54 53 00 0 CEMO 13

Aft Pressure Relief Door
Figure 003

PYLON-TO-WING CENTER FILLETS - GENERAL - INSPECTION/CHECK

R 1. Inspection of the Pylon-to-Wing Center Fillets

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice

Referenced Procedure
R - SRM/54-50-00, P. Block 101

B. Procedure

(1)Job Set-up

(a)Install access platform.

(b)Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

R (2)Inspection
(Ref. Fig. 601)

R (a)Do an inspection of the pylon-to-wing center fillets.

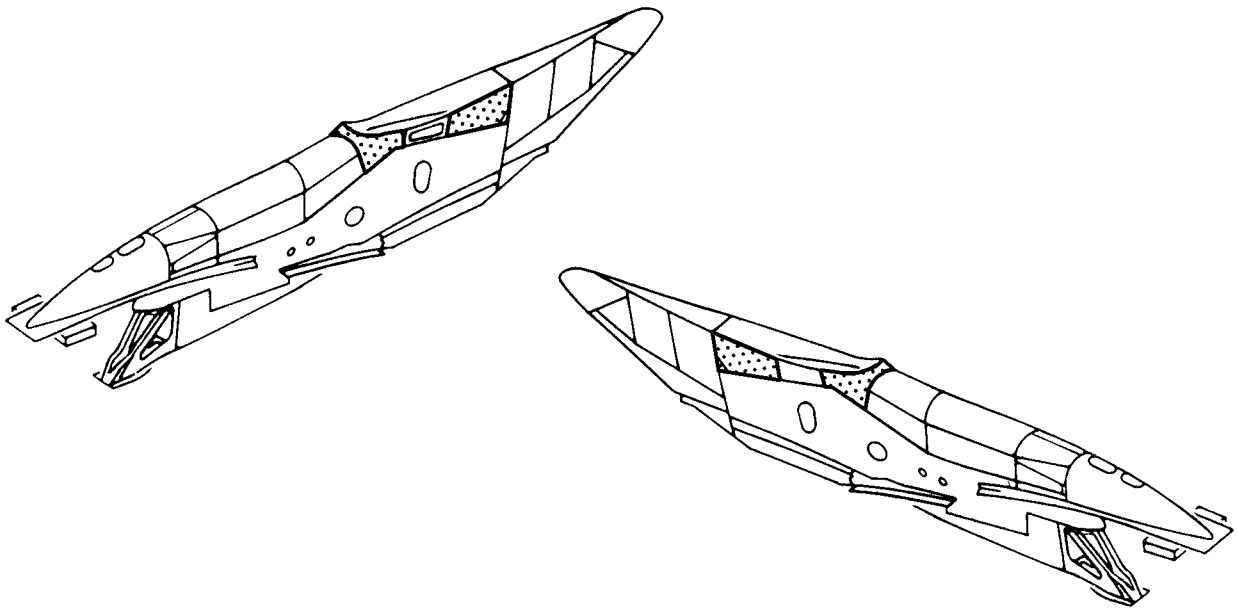
R (b)Make sure that there is no damage (cracks, nicks, erosion, separation
R of layers, ...) (Ref. SRM/54-50-00, P. Block 101).
R

(3)Close-up

R (a)In flight compartment, remove warning notice from flap and slat
R control lever.

R (b)Make certain that working area is clean and clear of tools and miscel-
R laneous items of equipment.

R (c)Remove access platform.



BM5 54 53 00 6 SRM0 02

Pylon-to-Wing Center Fillets - Inspection Area
Figure 601

R

PYLON-TO-WING CENTER FILLETS - GENERAL - INSPECTION/CHECK

1. Inspection of the Pylon-to-Wing Center Fillets

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice

Referenced Procedure
- SRM/54-50-00, P. Block 101

B. Procedure

(1)Job Set-up

(a)Install access platform.

(b)Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

(2)Inspection

(Ref. Fig. 601)

(a)Do an inspection of the pylon-to-wing center fillets.

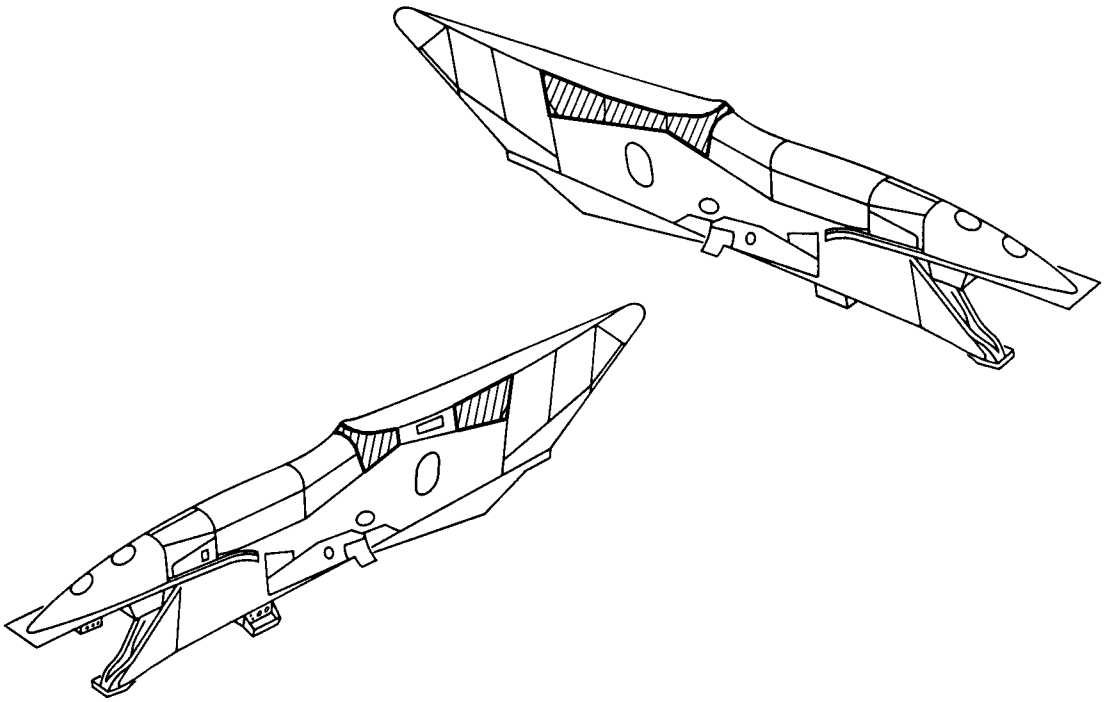
(b)Make sure that there is no damage (cracks, nicks, erosion, separation of layers, ...) (Ref. SRM/54-50-00, P. Block 101).

(3)Close-up

(a)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

(b)Remove access platform.

(c)In flight compartment, remove warning notice from flap and slat control lever.



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Pylon-to-Wing Center Fillets - Inspection Area
Figure 601

R

AFT FAIRING - DESCRIPTION AND OPERATION

1. General

The auxiliary structure aft section prolongs the main frame and improves the aerodynamic profile. It is made up of a frame attached under the wing and on which are installed six skin panels and one aft tip.

2. Description

The main components of the frame are
(Ref. Fig. 001)
(Ref. Fig. 002)

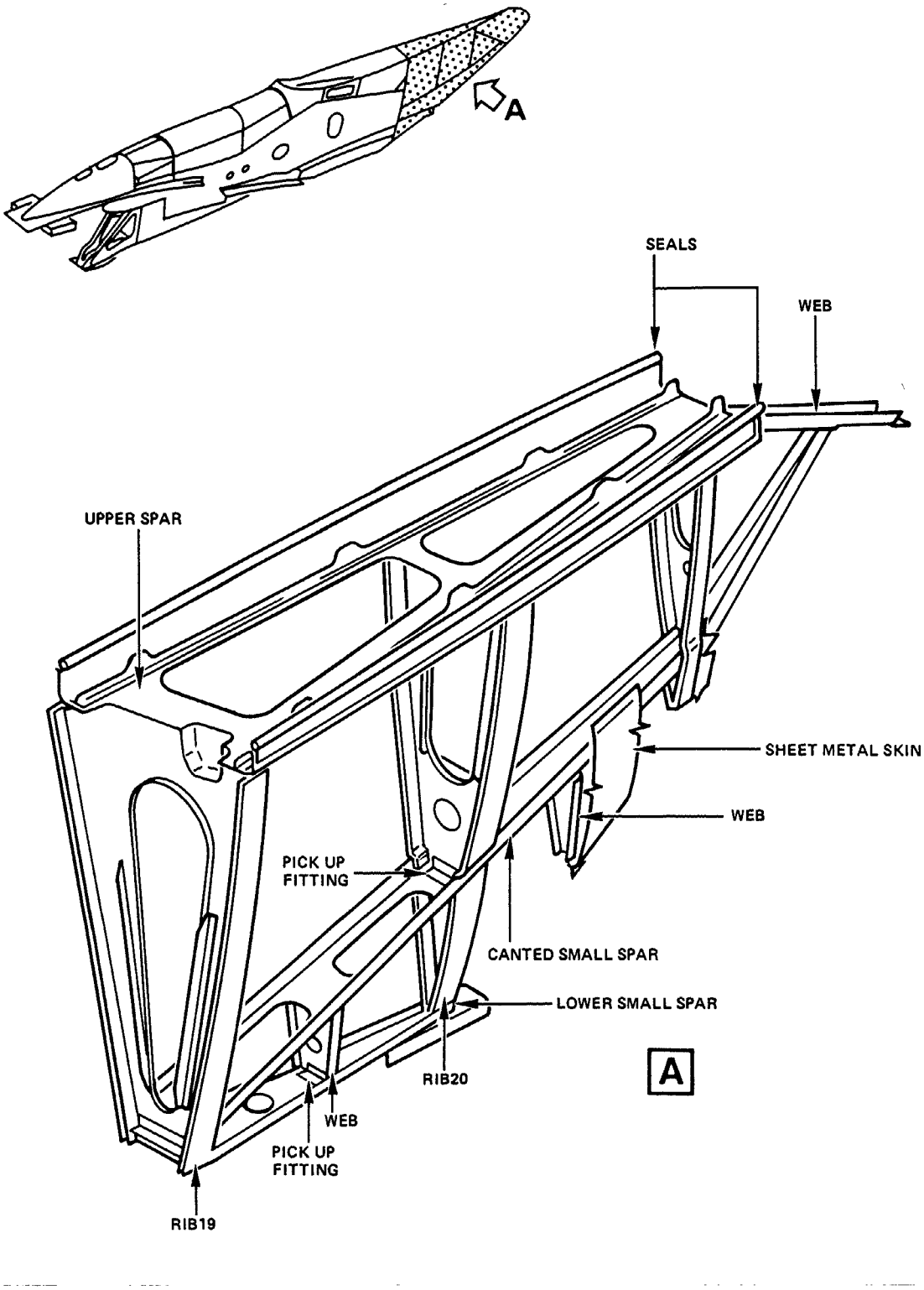
- three light alloy RIBs 19, 20, 21.
- a light alloy stamped spar on which is secured the rib upper end by means of angles. Two T formed sections which are attached to the spar and provide the aft fairing-to-wing junction.
- a lower spar attached to the lower ends of RIBs 19 and 20.
- two light alloy stiffeners attached under the lower spar.
- two side skin panels secured to the rib lower section and stiffeners so as to form the trailing edge.
- one canted spar attached to RIBs 19 and 21.

The six skin panels and the aft tip are make of aramid fiber layers enclosing a honeycomb web.

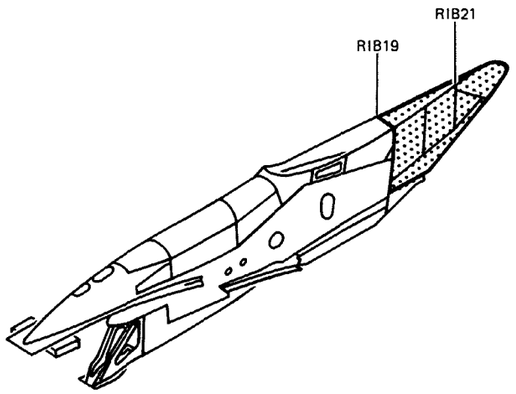
The following system lines are routed inside the aft auxiliary structure :

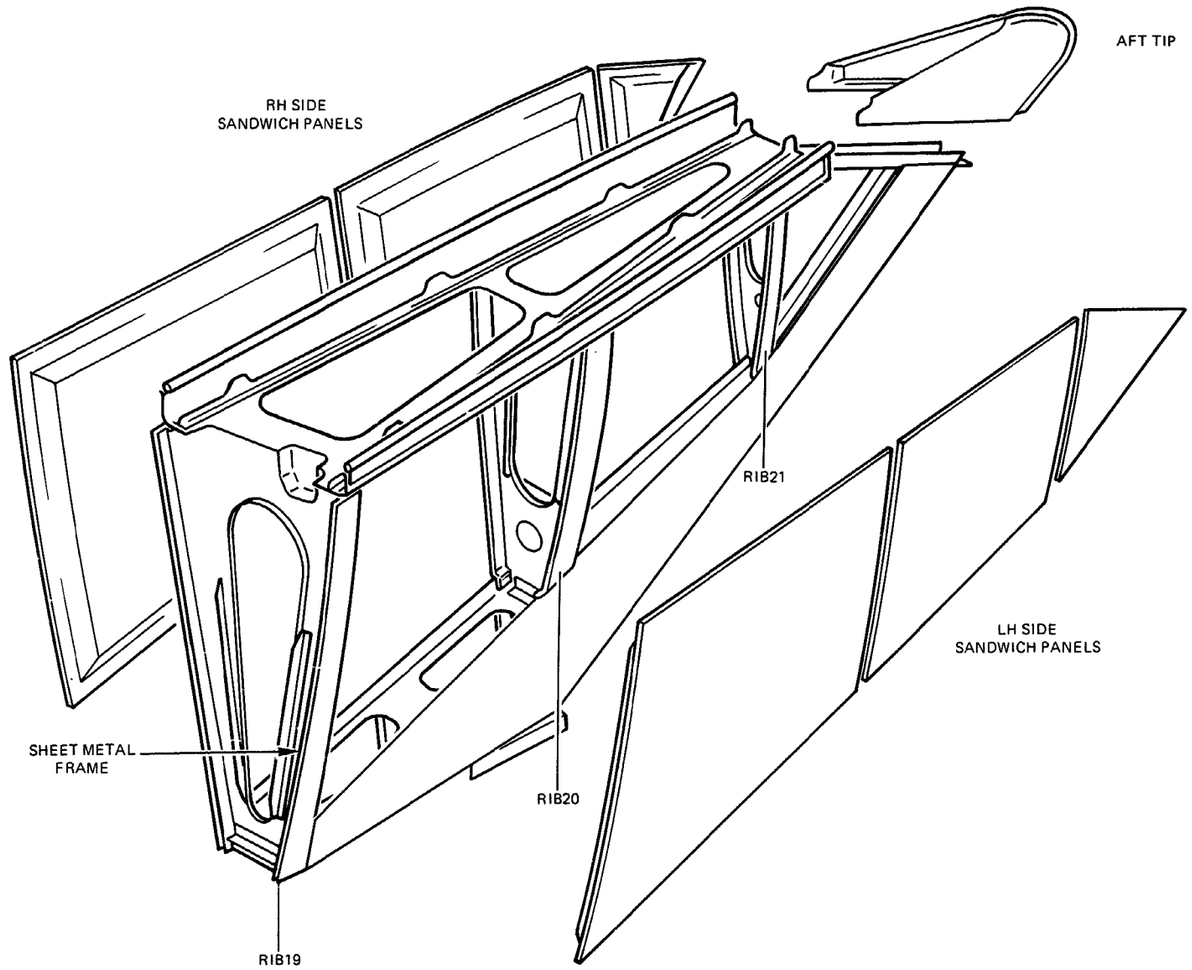
- Green and Yellow or Green and Blue hydraulic lines.
- Green and Yellow or Green and Blue case drain lines.
- hydraulic tank pressurizing line.
- fire extinguisher bottle percussion electrical cable run.
- The throttle and thrust reverser interlock electrical cables.

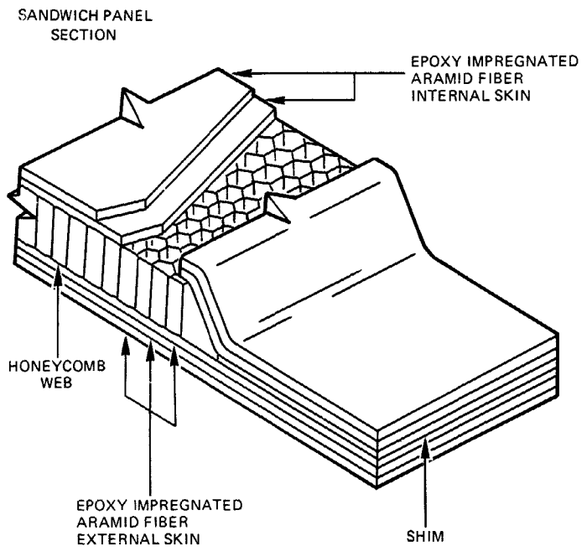
The aft tip and the skin panels between RIBs 19 and 20 are bolted and removable. These panels give access to the union nuts of the various lines at main frame-to-aft auxiliary structure interface. The aft tip gives access to line union nuts at pylon-to-wing interface.



Aft Section - Structure
Figure 001







BM5 54 54 00 0 SRSO - 10

Aft Section - Side Skin Panels
Figure 002

AFT FAIRING - DESCRIPTION AND OPERATION

1. General

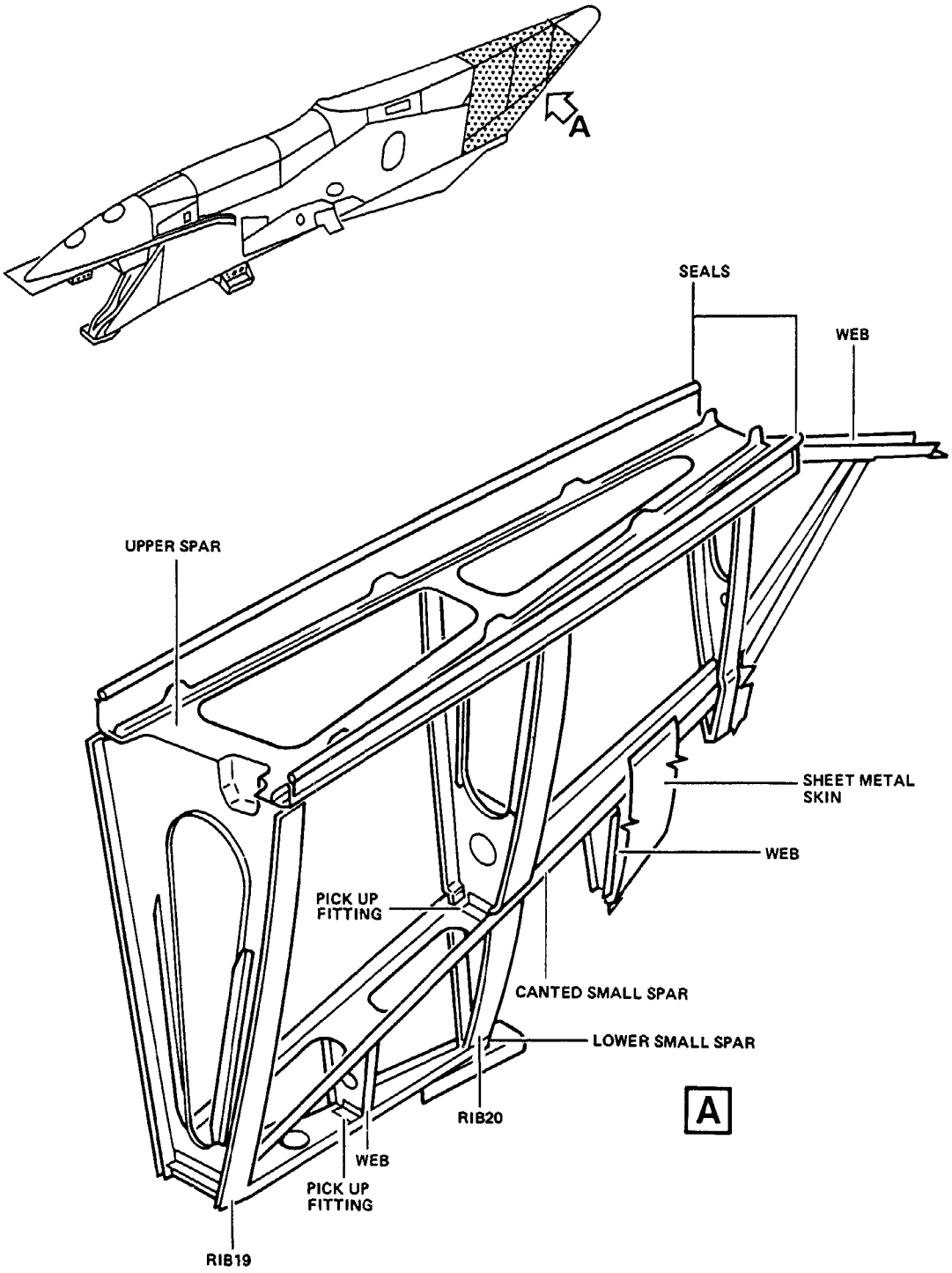
The auxiliary structure aft section prolongs the main frame and improves the aerodynamic profile. It is made up of a frame on which are installed six skin panels and one aft tip.
The frame is attached to the wing by means of Tee fittings.
Frame-to-pylon box junction at RIB 19 is provided by overlapping sheet metal bands attached to pylon box side panels.
(Ref. Fig. 001)
(Ref. Fig. 002)

2. Description

The main components of the frame are
- three light alloy RIBs 19, 20, 21.
- a light alloy stamped spar on which is secured the rib upper end by means of angles. Two T formed sections which are attached to the spar and provide the aft fairing-to-wing junction.
- a lower spar attached to the lower ends of RIBs 19 and 20.
- two light alloy stiffeners attached under the lower spar.
- two side skin panels secured to the rib lower section and stiffeners so as to form the trailing edge.
- one canted spar attached to RIBs 19 and 21.

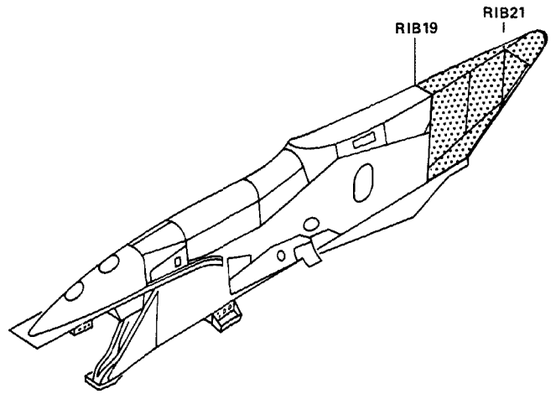
The six skin panels and the aft tip are make of aramid fiber layers enclosing a honeycomb web.
The following system lines are routed inside the aft auxiliary structure :
- Green and Yellow or Green and Blue hydraulic lines.
- Green and Yellow or Green and Blue case drain lines.
- hydraulic tank pressurizing line.
- fire extinguisher bottle percussion electrical cable run.

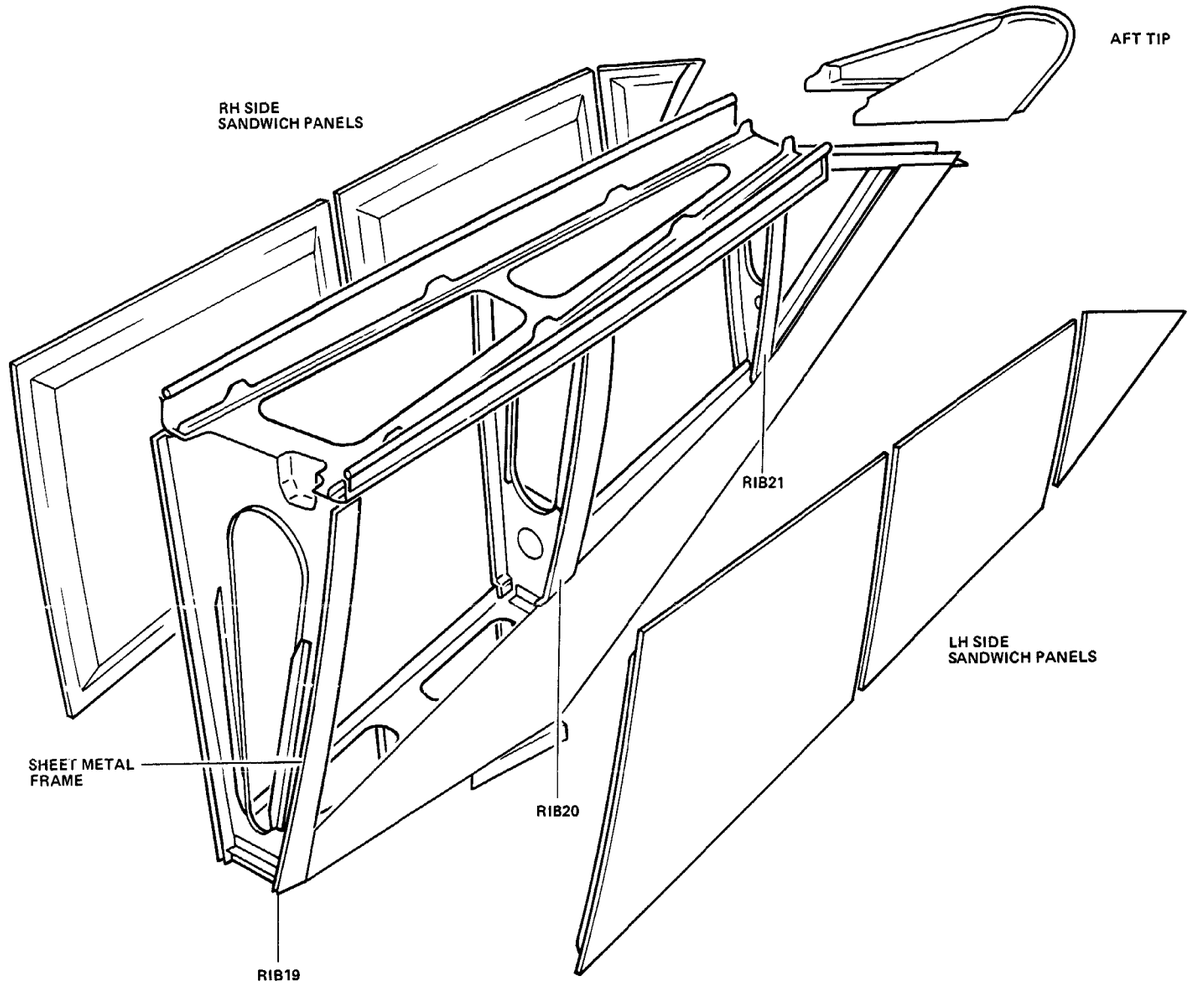
The aft tip and four skin panels between RIBs 19 and 20 are bolted and removable. These panels give access to the union nuts of the various lines at main frame-to-aft auxiliary structure interface. The aft tip gives access to line union nuts at pylon-to-wing interface.

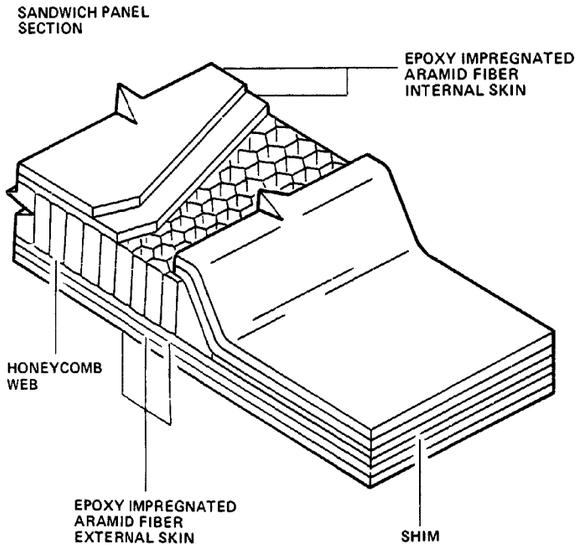


BM5 54 54 00 0 CAMO - 13

Aft Section - Structure
Figure 001







BM5 54 54 00 0 CCMO - 13

Aft Section - Side Skin Panels
Figure 002

AFT FAIRING - REMOVAL/INSTALLATION

WARNING : BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON FUEL SYSTEM, MAKE CERTAIN THAT FIRE EXTINGUISHING EQUIPMENT IS AVAILABLE IN PROXIMITY TO WORKING AREA.

BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON ENGINE PYLON, DISPLAY WARNING NOTICES OR LOCK FLAP AND SLAT CONTROL LEVER TO PROHIBIT MANEUVERS.

CAUTION : TO PREVENT DAMAGE, CONTAMINATION AND INGESTION OF FOREIGN MATTER, PIPES, PNEUMATIC DUCTS AND ELECTRICAL CONNECTORS SHALL BE CAPPED.

NOTE : It would be more advisable to carry out this operation during an engine removal/installation or during hydraulic component Removal/Installation.

1. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Blanking Caps
(3)98A26213501000	Wrench - Special
or 98A26213502000	Wrench - Special
(4)98A29113501000	Wrench - Special
or 98A29113502000	Wrench - Special
or 98A29113503000	Wrench - Special
(5)	Warning Notices
Referenced Procedures	
- 12-12-29, P. Block 1	Hydraulics
- 26-21-00, P. Block 501	Engine Fire Extinguishing
- 26-21-13, P. Block 401	Discharge Cartridge
- 29-00-00, P. Block 401	General
- 29-10-00, P. Block 301	Main
- 29-11-32, P. Block 401	Engine Pump
- 29-14-00, P. Block 301	Hydraulic Reservoir Pressurizing System

2. Procedure

NOTE : Removal/installation of pylon aft fairing is identical for both engine pylons.

CAUTION : WEIGHT OF THE AFT FAIRING IS CONSIDERABLE, TAKE NECESSARY PROVISIONS TO SUPPORT IT.

A. Job Set-Up

(1)In flight compartment, on center pedestal, install a warning notice on flap and slat control lever to prevent any inadvertent operation.

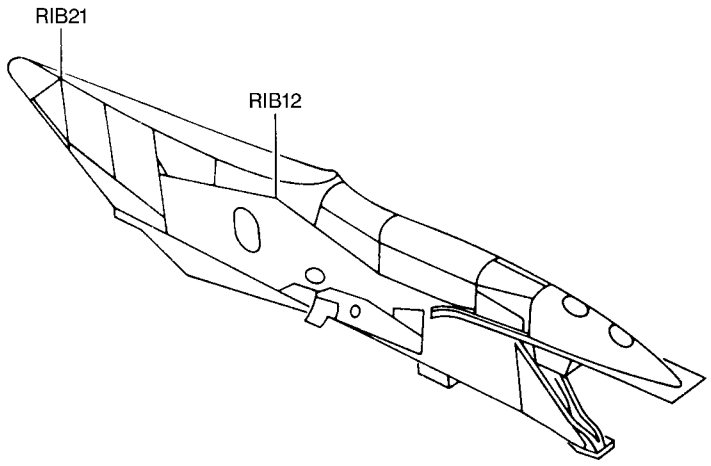
(2)Open, safety and tag the following circuit breakers :

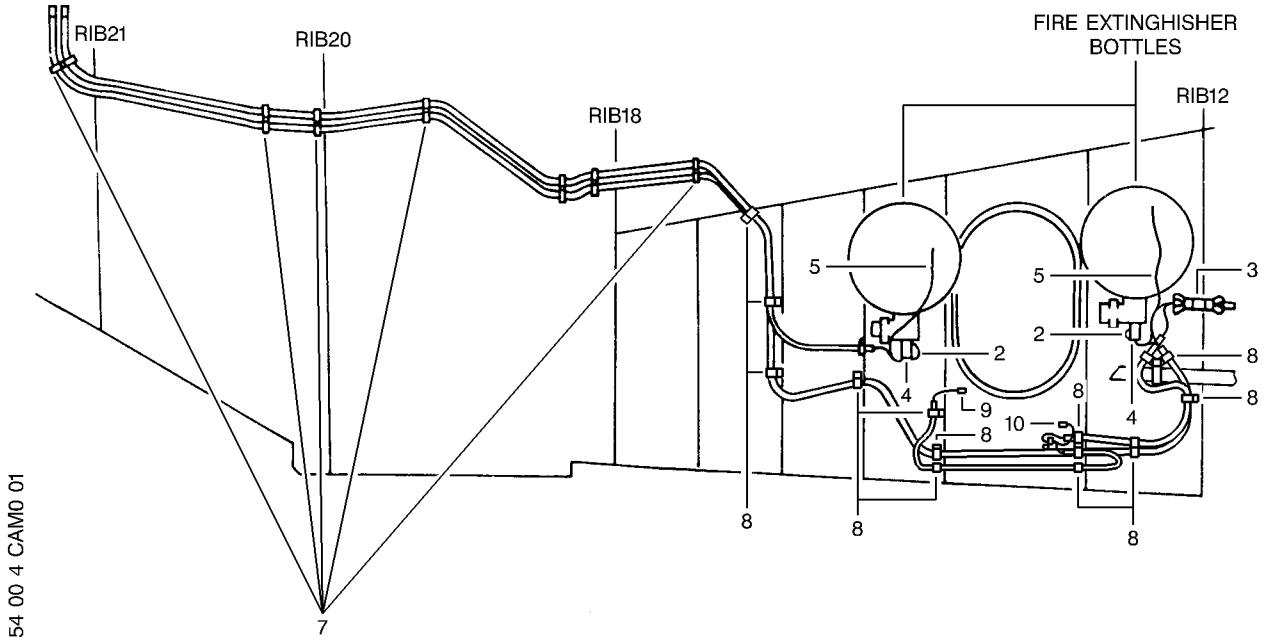
PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 2	7WE	207/C20
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74

PANEL	SERVICE	IDENT.	LOCATION
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG 1/FUEL HP VALVE/WARN	1KC	333/T68
133VU	ENGINES/ENG 1/FUEL HP VALVE/CTL	3KC	333/T69
133VU	ENGINES/ENG 2/FUEL HP VALVE/CTL	4KC	333/T70
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL 1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL 2	3WE	335/R72
133VU	ENGINES/ENG 2/FUEL HP VALVE/WARN	2KC	335/R73

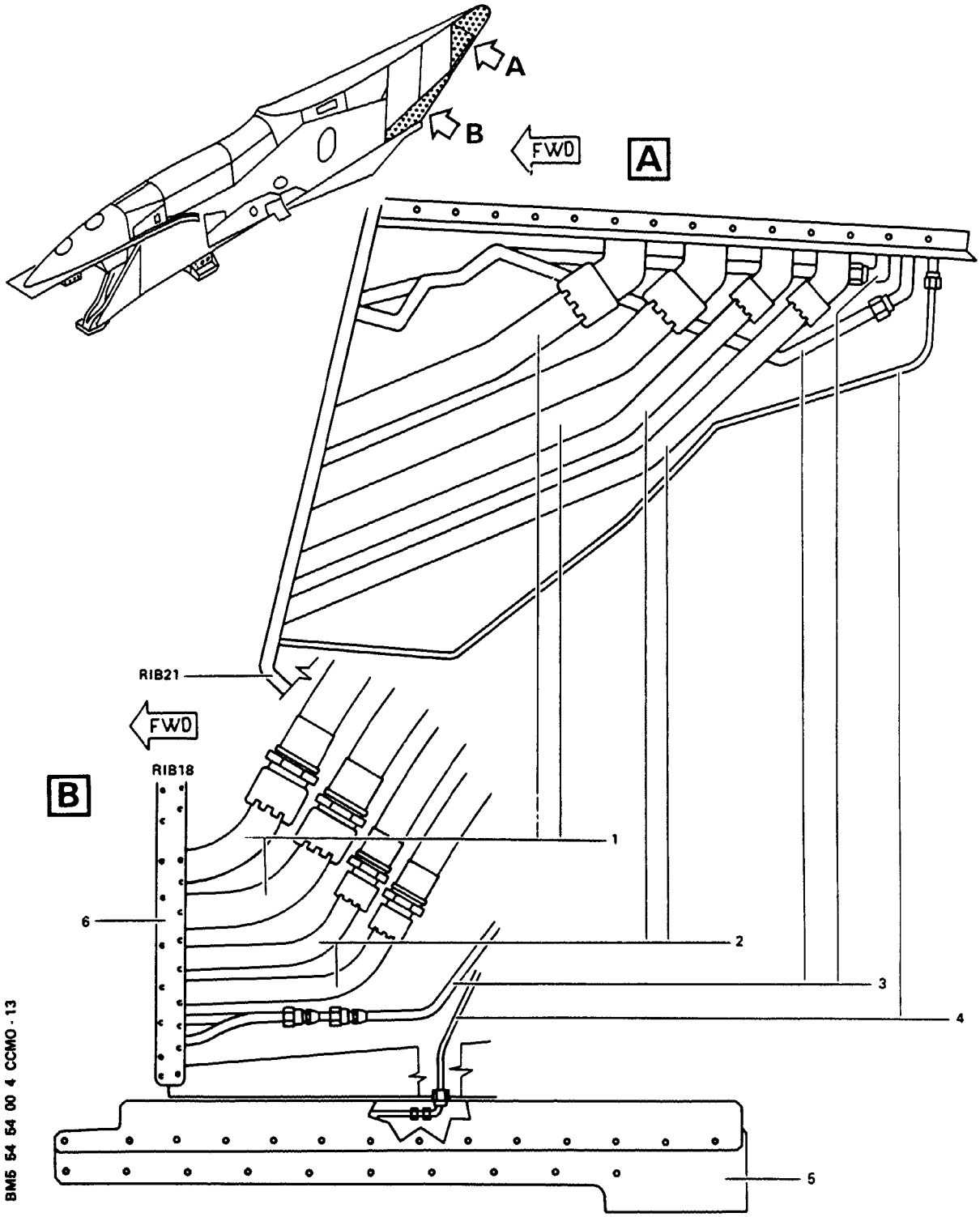
(3)Depressurize hydraulic reservoirs (Ref. 29-14-00, P. Block 301).
(4)Depressurize Green and Blue or Green and Yellow hydraulic systems (Ref. 29-10-00, P. Block 301).
(5)In flight compartment, overhead panel, pull ENG 1 FIRE and ENG 2 FIRE handles. Install a warning notice to prohibit actuation.
(6)Install access platforms at engine pylon.

B. Removal
(1)L engine pylon
(a)Remove panels 474CR, 473CL, 474DR
(b)Open access doors 473AL, 474AR
(c)Remove aft tip 473EL.
(2)R engine pylon
(a)Remove panels 484CR, 483CL, 483DL
(b)Open access doors 483AL, 484AR
(c)Remove aft tip 483EL.
(3)Remove cables routed in this area as follows : (Ref. Fig. 401)
(a)Remove fire extinguisher bottle discharge cartridges (Ref. 26-21-13, P. Block 401).
(b)Disconnect plugs from pressure switch (2), cartridges (4) and HP fuel shut off valve control plug (3). Install blanking caps on coupling ends.
(c)Cut and remove lockwires. Disconnect electrical connectors from pressure switches (9) and (10).
(d)Install blanking caps on pressure switches coupling ends.
(e)Disconnect grounding leads (5).
(f)Remove clamps (7) and (8) holding leads at aft main and auxiliary structure.
(g)Disengage cables from main structure.
(h)Coil cable and attach it momentarily to aft structure.
(4)Remove fasteners from pick-up element (5), then draw it backward (Ref. Fig. 402)
(5)Remove overlapping band (6).
(6)Disconnect lines routed between RIB19 and RIB21





Routing of Electrical Wiring in Pylon Between RIB12 and RIB21
Figure 401



Line Removal Between RIB19 and RIB21
Figure 402

NOTE : Place a container under line unions to recover hydraulic fluid flowing out from system lines during removal.

(a)On L pylon only disconnect hydraulic reservoir pressurizing line (4) at wing-to-pylon interface and under aft pylon structure between RIB19 and RIB20.

(b)Remove hydraulic line (1), (2) and hydraulic drainage line (3) unions at wing-to-pylon interface, at RIB19 (Ref. 29-00-00, P. Block 401).
Use special 98A26213501000 (or 98A26213502000) to remove castellated nuts from lines (1).
Use special 98A29113501000 (or 98A29113502000 or 98A29113503000) to remove castellated nuts from lines (2).

(7)Disassemble aft structure from wing lower surface (Ref. Fig. 403)

(a)For each attach fitting, remove bolts (51) and lockwashers (50).

(b)Disengage fire extinguisher bottle control cable.

(c)Remove aft structure taking care not to damage fire extinguisher bottle control cable, drainage tubes and hydraulic junctions at wing.

(d)Coil fire extinguisher bottle control cable and attach it to wing lower surface.

C. Installation

(1)Secure aft structure fitted with hydraulic and pneumatic lines to wing lower surface.

(2)Connect lines as follows

(a)Between RIB19 and RIB20, connect hydraulic and hydraulic drainage lines (Ref. 29-00-00, P. Block 401).

(b)Under aft pylon structure and at RIB19 and RIB20, connect reservoir pressurizing line (on L Pylon only).

(c)Connect hydraulic reservoir pressurizing line and lines at wing-to-pylon junction.

(d)Tighten line couplings :

- For hydraulic lines (1), TORQUE unions to between 15.8 and 18.1 m.daN (1398.23 lbf.in and 1601.77 lbf.in). Use special wrench 98A26213501000 (or 98A26213502000) to install castellated nuts.
- For hydraulic lines (2), TORQUE unions to between 12.9 and 14.2 m.daN (1141.59 lbf.in and 1256.63 lbf.in). Use special wrench 98A29113501000 (or 98A29113502000 or 98A29113503000) to install castellated nuts.
- For hydraulic drainage lines (3), TORQUE unions to between 2.9 and 3.2 m.daN (256.67 lbf.in and 283.22 lbf.in).
- For hydraulic reservoir pressurizing line (4), TORQUE union to between 1.5 and 1.7 m.daN (132.74 lbf.in and 150.44 lbf.in).

(3)Install electrical cables as follows :

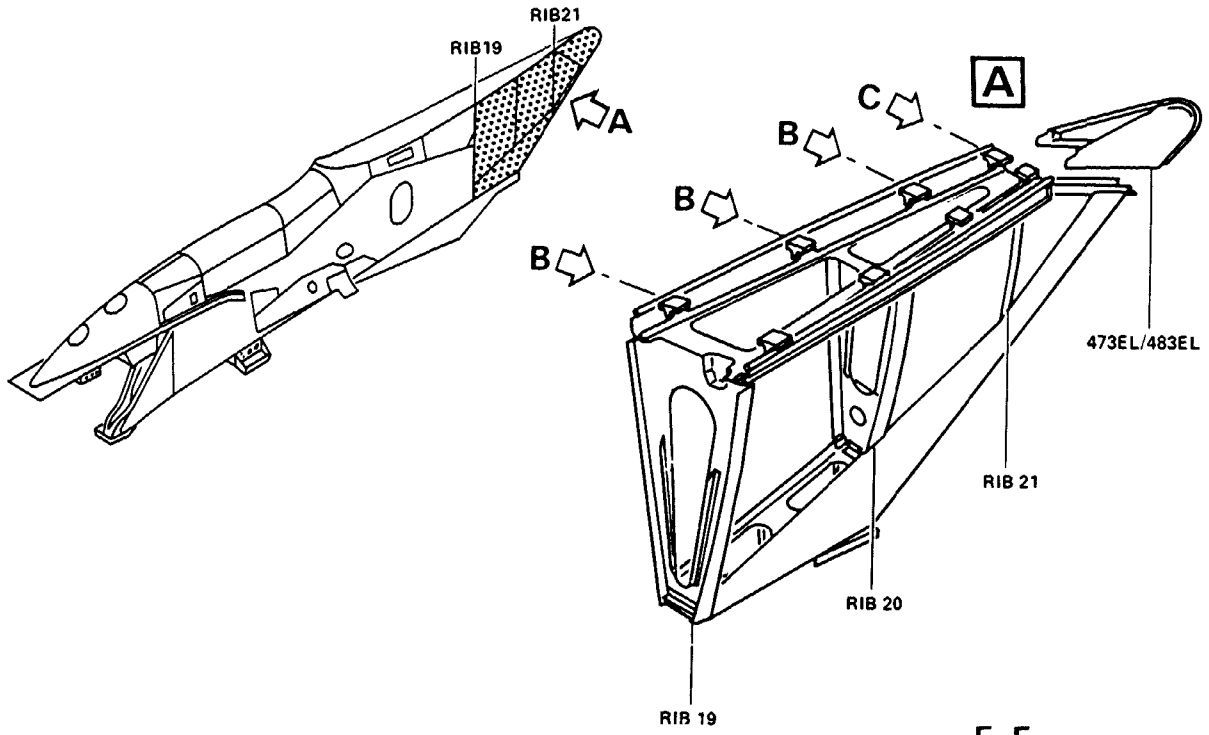
(a)Install cables and attach with clamps (7) and (8).

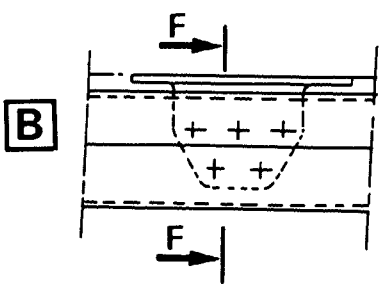
(b)Connect fire extinguisher bottle and HP fuel shut off valve wiring. junction.

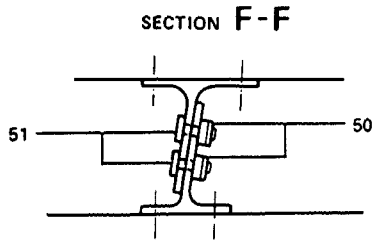
(c)Install fire extinguisher bottle discharge cartridges (Ref. 26-21-13, P. Block 401).

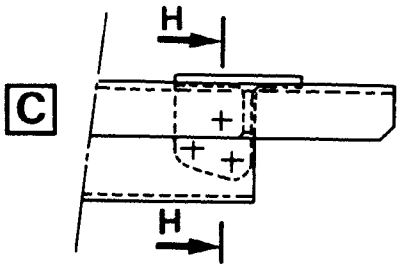
(d)Remove blanking caps from pressure switch (2), cartridges (4), HP fuel shut off valve control plug (3) and pressure switches (9), (10).

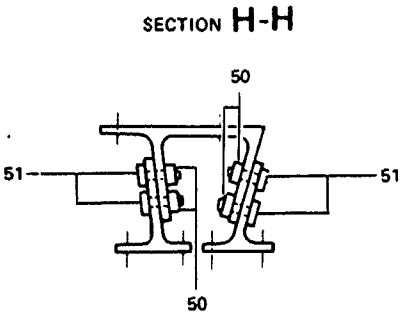
(e)Connect plugs on pressure switch (2), cartridges (4) and HP fuel shut











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Removal of Aft Structure
Figure 403

off valve control plug (3).
(f)Connect electrical connectors on pressure switches (9), (10) and wirelock.
(4)Position and tighten fasteners of pick-up element and overlapping band.

D. Test
(1)Do an operational test (SQUIB TEST) of discharge cartridges (Ref. 26-21-00, P. Block 501).
(2)Do a Fire Extinguisher Bottle Low Pressure. Indicating circuits functional Test (Ref. 26-21-00, P. Block 501).
(3)Make sure that electrical connectors of pressure switches (9) and (10) are correctly connected.

E. Close-Up
(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(2)L engine pylon.
(a)Install aft tip 473EL.
(b)Close access doors 473AL, 474AR.
(c)Install panels 474CR, 473CL, 474DR.
(3)R engine pylon.
(a)Install aft tip 483EL.
(b)Close access doors 483AL, 484AR.
(c)Install panels 484CR, 483CL, 483DL.
(4)In flight compartment, overhead panel, push ENG 1 FIRE and ENG 2 FIRE handles in normal position.
(5)Top-up hydraulic reservoirs (Ref. 12-12-29, P. Block 1).
(6)Pressurize and bleed hydraulic system (Ref. 29-14-00, P. Block 301, 29-10-00, P. Block 301, 29-00-00, P. Block 401 and 29-11-32, P. Block 401).
(7)Remove safety clips and tags and close circuit breakers.
(8)Remove access platform.

AFT FAIRING - REMOVAL/INSTALLATION

WARNING : BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON FUEL SYSTEM, MAKE CERTAIN THAT FIRE EXTINGUISHING EQUIPMENT IS AVAILABLE IN PROXIMITY TO WORKING AREA.

BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON ENGINE PYLON, LOCK FLAP AND SLAT CONTROL LEVER TO PROHIBIT MANEUVERS.

CAUTION : TO PREVENT DAMAGE, CONTAMINATION AND INGESTION OF FOREIGN MATTER, PIPES, PNEUMATIC DUCTS AND ELECTRICAL CONNECTORS SHALL BE CAPPED.

NOTE : It would be more advisable to carry out this operation during an engine removal/installation or during hydraulic component Removal/Installation.

1. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)98A26213501000	Special Wrench
98A26213502000	Special Wrench
(3)98A29113501000	Special Wrench
98A29113502000	Special Wrench
98A29113503000	Special Wrench
(4)	Warning Notices
Referenced Procedures	
- 12-12-29, P. Block 1	Hydraulics
- 26-21-13, P. Block 401	Discharge Cartridge
- 29-00-00, P. Block 401	General
- 29-10-00, P. Block 301	Main
- 29-11-32, P. Block 401	Engine Pump
- 29-14-00, P. Block 301	Hydraulic Reservoir Pressurizing System

2. Procedure

NOTE : Removal/installation of pylon aft fairing is identical for both engine pylons.

CAUTION : WEIGHT OF THE AFT FAIRING IS CONSIDERABLE, TAKE NECESSARY PROVISIONS TO SUPPORT IT.

A. Job Set-Up

(1)In flight compartment, on center pedestal, install a warning notice on flap and slat control lever to prevent inadvertent operation.

(2)Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
21VU	AFS/TCC/SYS1/28VDC	306CJ1	102/H8
21VU	AFS/TCC/SYS1/115VAC	308CJ1	102/H9
21VU	AFS/TCC/SYS1/SENSORS	305CJ1	102/H10
21VU	ADS/ADC2/26VAC	8FL2	105/E9
21VU	ADS/ADC2/115VAC	9FL2	105/E10
21VU	ECAM/SGU/1	11WT1	108/B4

PANEL	SERVICE	IDENT.	LOCATION
21VU	ECAM/SGU/2	11WT2	108/B5
22VU	FADEC/MODE WARN/ENG1	17KS	204/F22
22VU	FADEC/MODE WARN/ENG2	16KS	204/F23
22VU	FIRE EXTING/ENG 1&2/SQUIB B/BTL1	5WE	207/C19
22VU	FIRE EXTING/ENG 1&2/SQUIB B/BTL2	7WE	207/C20
22VU	MIN EQPT BAY SUPPLY/ADS/ADC2 BARO SET	55FL1	208/B18
22VU	MIN EQPT BAY SUPPLY/ADS/ADC1/115VAC	9FL1	208/B19
22VU	MIN EQPT BAY SUPPLY/ADS/ADC1/26VAC	8FL1	208/B20
133VU	ENGINES/ENG2/FADEC SOLENOIDS/CHANNEL B	20KS	331/V69
133VU	ENGINES/ENG2/FADEC SOLENOIDS/CHANNEL B	21KS	331/V70
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG 1/FADEC SOLENOIDS/CHANNEL A	19KS	332/U70
133VU	ENGINES/ENG 2/FADEC SOLENOIDS/CHANNEL A	18KS	332/U71
133VU	ENGINES/ENG 1/FUEL HP VALVE/WARN	1KC	333/T68
133VU	ENGINES/ENG 1/FUEL HP VALVE/CTL	3KC	333/T69
133VU	ENGINES/ENG 2/FUEL HP VALVE/CTL	4KC	333/T70
133VU	ENGINES/IGNITION/ENG 2/SYS A	8JH	333/T71
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG 1/N1 IND	1EJ	334/S69
133VU	ENGINES/ENG 2/N1 IND	2EJ	334/S74
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/BTL1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/BLT2	3WE	335/R72
133VU	ENGINES/ENG 2/FUEL HP VALVE/WARN	2KC	335/R73

(3)Depressurize hydraulic reservoirs (Ref. 29-14-00, P. Block 301).
(4)Depressurize Green and Blue or Green and Yellow hydraulic systems (Ref. 29-10-00, P. Block 301).
(5)In flight compartment, overhead panel, pull ENG 1 FIRE and ENG 2 FIRE handles. Install a warning notice to prohibit actuation.
(6)Install access platforms at engine pylon.

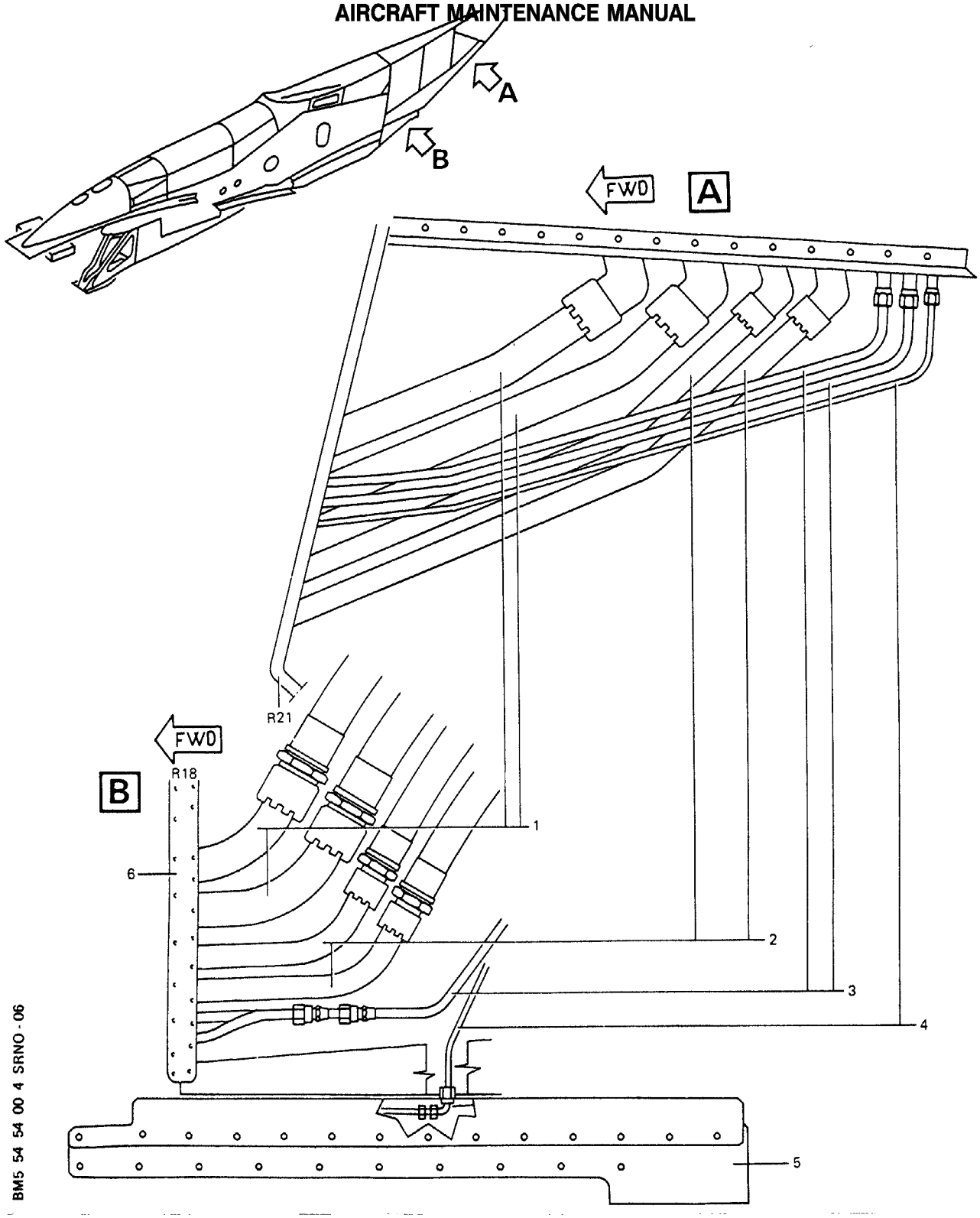
B. Removal
(1)LH engine pylon
(a)Remove panels 474CR, 473CL, 474DR
(b)Open access doors 473AL, 474AR
(c)Remove aft tip 473EL.
(2)RH engine pylon
(a)Remove panels 484CR, 483CL, 483DL
(b)Open access doors 483AL, 484AR
(c)Remove aft tip 483EL.
(3)Remove cables routed in this area as follows :
(a)Remove fire extinguisher bottle discharge cartridges (Ref. 26-21-13, P. Block 401).
(b)Disconnect connectors at wing-to-pylon junction and install protective closures.

(c)Remove clamps attaching electrical cables to aft fairing structure.
(d)Coil cable and attach it momentarily to aft structure.
(4)Remove fasteners from pick-up element (5), then draw it backward (Ref. Fig. 401)
(5)Remove overlapping band (6).
(6)Disconnect lines routed between RIB19 and RIB21
NOTE : Place a container under line unions to recover hydraulic fluid flowing out from system lines during removal.
(a)On left pylon only disconnect hydraulic reservoir pressurizing line (4) at wing-to-pylon interface and under aft pylon structure between RIB19 and RIB20.
(b)Remove hydraulic line (1), (2) and hydraulic drainage line (3) unions at wing-to-pylon interface, at RIB19 (Ref. 29-00-00, P. Block 401).
R Use special wrench 98A26213501000 (or 98A26213502000) to remove castellated nuts from lines (1).
R Use special wrench 98A29113501000 (or 98A29113502000, or
R 98A29113503000) to remove castellated nuts from lines (2).
(7)Disassemble aft structure from wing lower surface (Ref. Fig. 402)
(a)For each attach fitting, remove bolts (51) and lockwashers (50).
(b)Disengage electrical cables.
(c)Remove aft structure taking care not to damage electrical cables, drainage tubes and hydraulic junctions at wing.
(d)Attach electrical cables to primary structure.

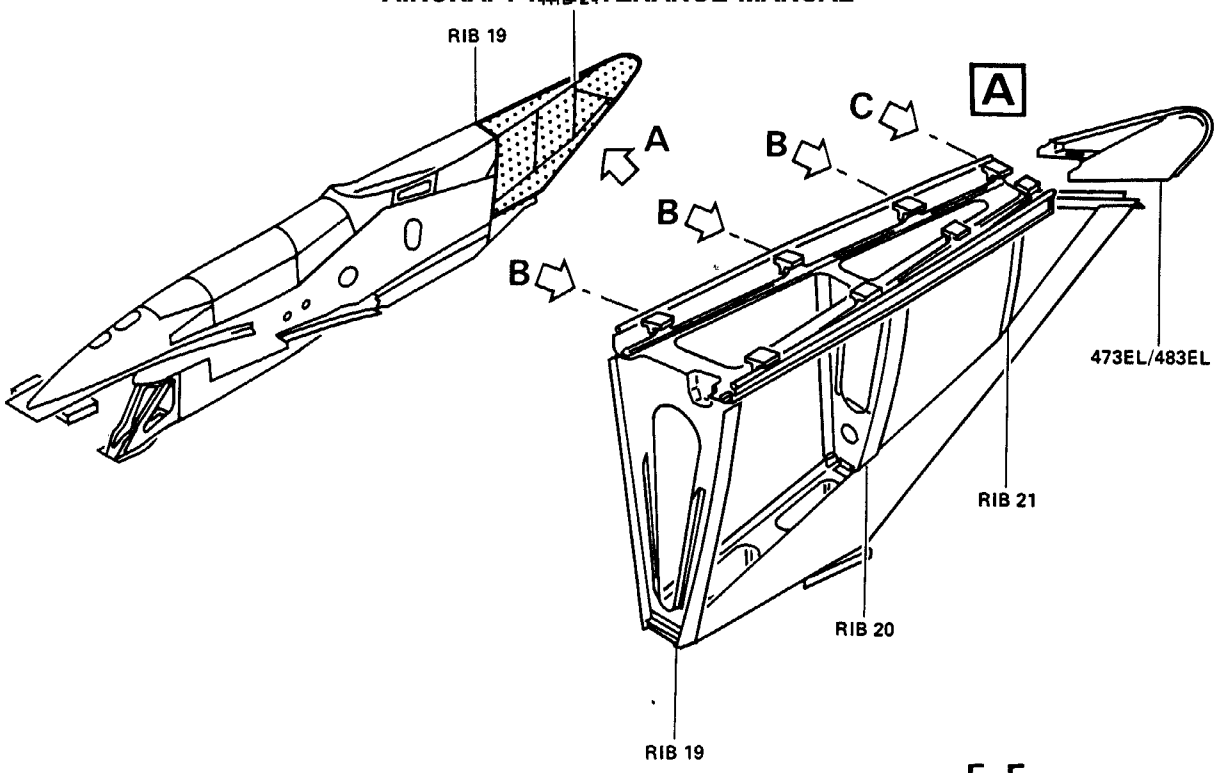
C. Installation
(1)Secure aft structure fitted with hydraulic and pneumatic lines to wing lower surface (Ref. Fig. 402).
(2)Connect lines as follows
(a)Between RIB19 and RIB20 connect hydraulic and hydraulic drainage lines (Ref. 29-00-00, P. Block 401).
(b)Under aft pylon structure and at RIB19 and RIB20 connect reservoir pressurizing line.
(c)Connect hydraulic reservoir pressurizing line and lines at wing-to-pylon junction.
R (d)Tighten line couplings :
R - For hydraulic lines (1), TORQUE unions to between 15.8 and 18.1 m.daN
R (1398.23 lbf.in and 1601.77 lbf.in). Use special wrench
R 98A26213501000 (or 98A26213502000) to install castellated nuts.
R - For hydraulic lines (2), TORQUE unions to between 12.9 and 14.2 m.daN
R (1141.59 lbf.in and 1256.63 lbf.in). Use special wrench
R 98A29113501000 (or 98A29113502000 or 98A29113503000) to install
R castellated nuts.
R - For hydraulic drainage lines (3), TORQUE unions to between 2.9 and
R 3.2 m.daN (256.63 lbf.in and 283.18 lbf.in).
R - For hydraulic reservoir pressurizing line (4), TORQUE union to
R between 1.5 and 1.7 m.daN (132.74 lbf.in and 150.44 lbf.in).
(3)Install electrical cables as follows :
(a)Install cables and attach with their clamps.
(b)Remove protective closures and install connectors at wing-to-pylon junction.
(c)Install fire extinguisher bottle discharge cartridges (Ref. 26-21-13).

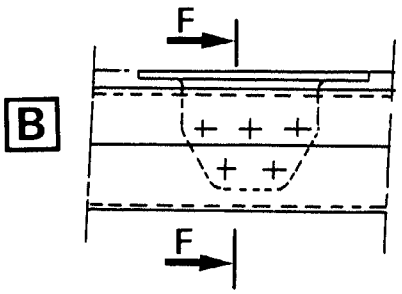
P. Block 401).
(4)Position and tighten fasteners of pick-up element and overlapping band.
(5)LH engine pylon.
(a)Install aft tip 473EL.
(b)Close access doors 473AL, 474AR.
(c)Install panels 474CR, 473CL, 474DR.
(6)RH engine pylon.
(a)Install aft tip 483EL.
(b)Close access doors 483AL, 484AR.
(c)Install panels 484CR, 483CL, 483DL.

D. Close-Up
(1)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(2)In flight compartment, overhead panel, push ENG 1 FIRE and ENG 2 FIRE handles in normal position and remove warning notices.
(3)Top-up hydraulic reservoirs (Ref. 12-12-29, P. Block 1).
(4)Pressurize and bleed hydraulic system (Ref. 29-14-00, P. Block 301; 29-10-00, P. Block 301; 29-00-00, P. Block 401 and 29-11-32, P. Block 401).
(5)Remove safety clips and tags and close circuit breakers.
(6)Remove access platform.

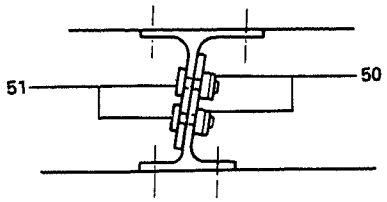


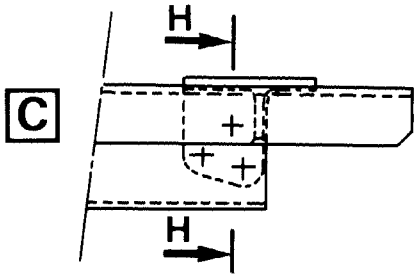
Line Removal Between RIB19 and RIB21
Figure 401



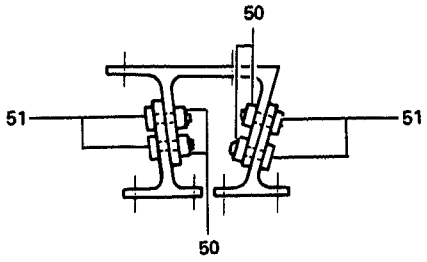


SECTION F-F





SECTION H-H



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Removal of Aft Structure
Figure 402

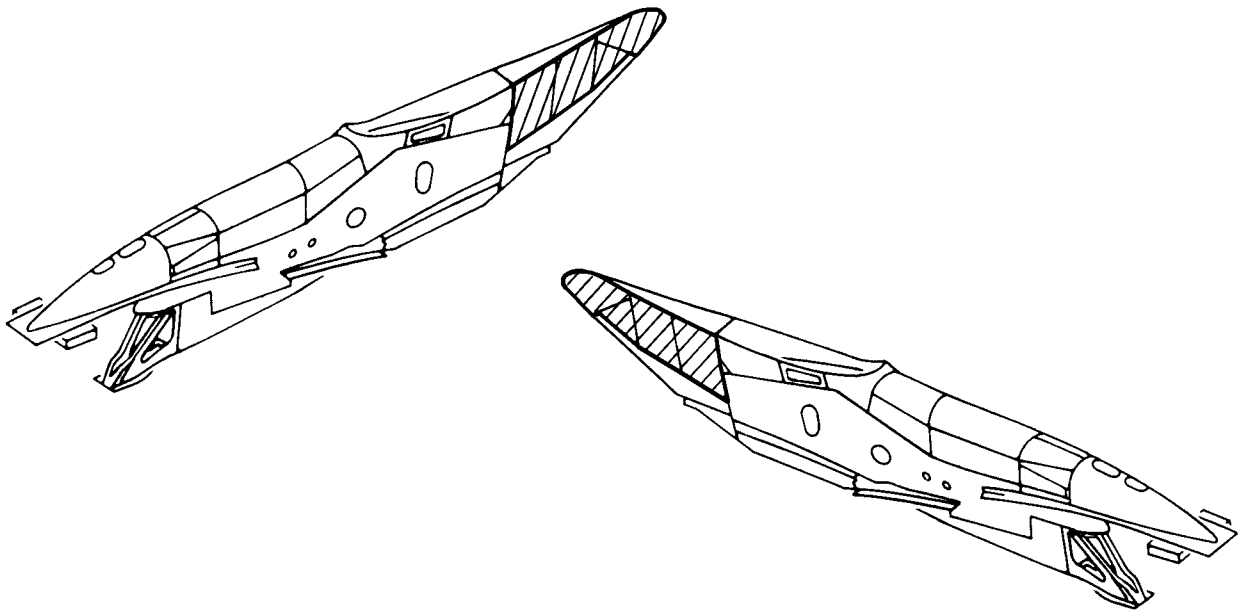
R 1. Inspection of the Aft Fairing

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
R (2)	Warning Notice

Referenced Procedure
R - SRM/54-50-00, P. Block 101

B. Procedure
(1)Job set-up
(a)Install access platform.
R (b)Make certain that slats are retracted. In flight compartment, place
R a warning notice prohibiting operation of flap and slat control lever.
R (2)Inspection
R (Ref. Fig. 601, 602)
R (a)Do an inspection of the aft fairing (honeycomb and metallic skin
R panels).
R (b)Make sure that there is no damage (cracks, nicks, erosion, separation
R of layers, etc ...) (Ref. SRM/54-50-00, P. Block 101).
R
(3)Close-up
R (a)In flight compartment, remove warning notice from flap and slat control
R lever.
R (b)Make certain that working area is clean and clear of tools and miscel-
R laneous items of equipment.
R (c)Remove access platform.

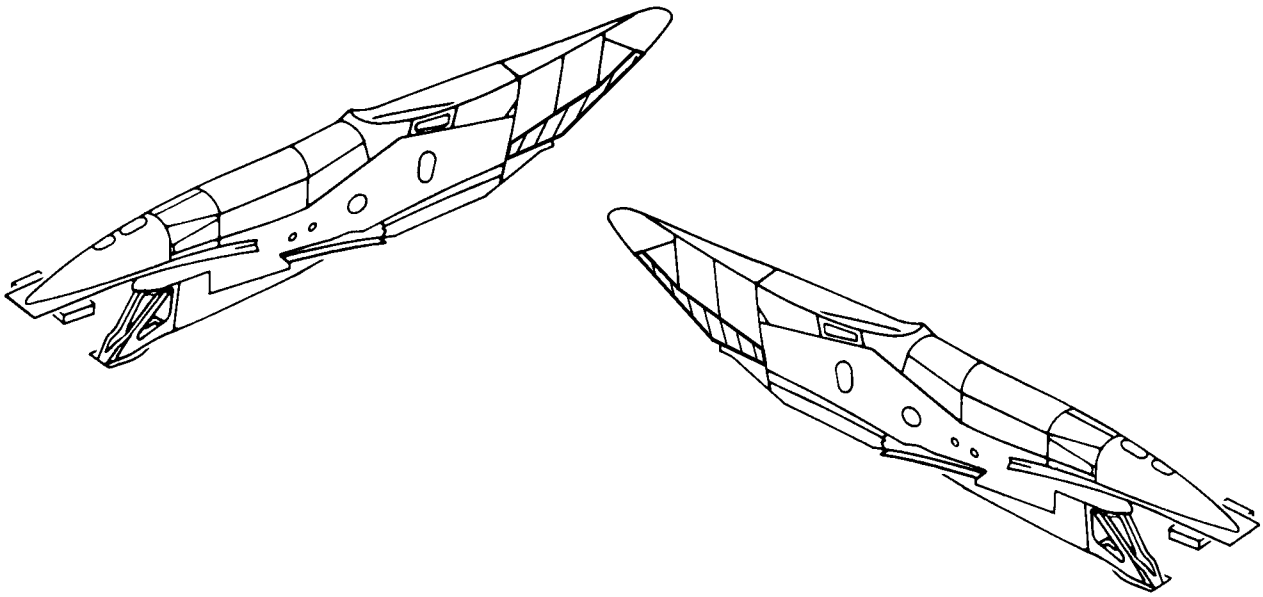


INSPECTION AREA

BM5 54 54 00 6 SRM0 02

R

Aft Fairing - Inspection Area
Figure 601



BM5 54 54 00 6 SRR0 02

Metallic Skin Panels - Inspection Area
Figure 602

R

1. Inspection of the Aft Fairing

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice

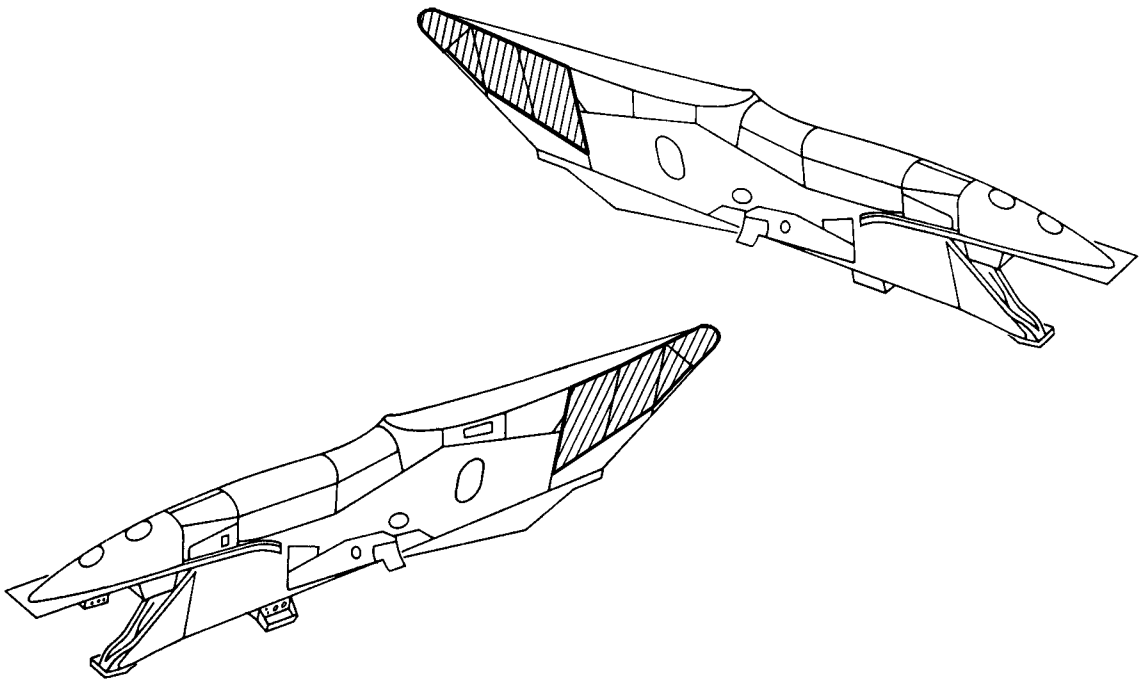
Referenced Procedure
- SRM/54-54-00, P. Block 101

B. Procedure

(1)Job set-up
(a)Install access platform.
(b)Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

(2)Inspection
(Ref. Fig. 601,)
(a)Do an inspection of the aft fairing (honeycomb and metallic skin panels).
(b)Make sure that there is no damage (cracks, nicks, erosion, separation of layers, ...) (Ref. SRM/54-50-00, P. Block 101).

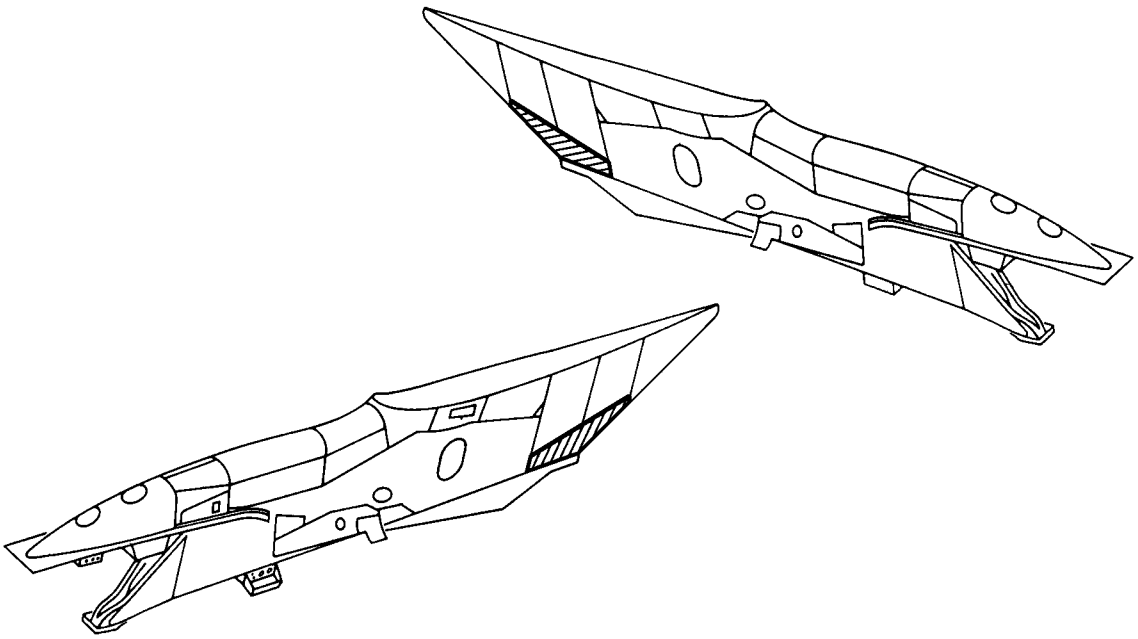
(3)Close-up
(a)In flight compartment, remove warning notice from flap and slat control lever.
(b)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(c)Remove access platform.



INSPECTION AREA

BM5 54 54 00 6 CAM0 02

Aft Fairing - Inspection Area
Figure 601



INSPECTION AREA

BM5 54 54 00 6 LBM0 02

Metallic Skin Panels - Inspection Area
Figure 602

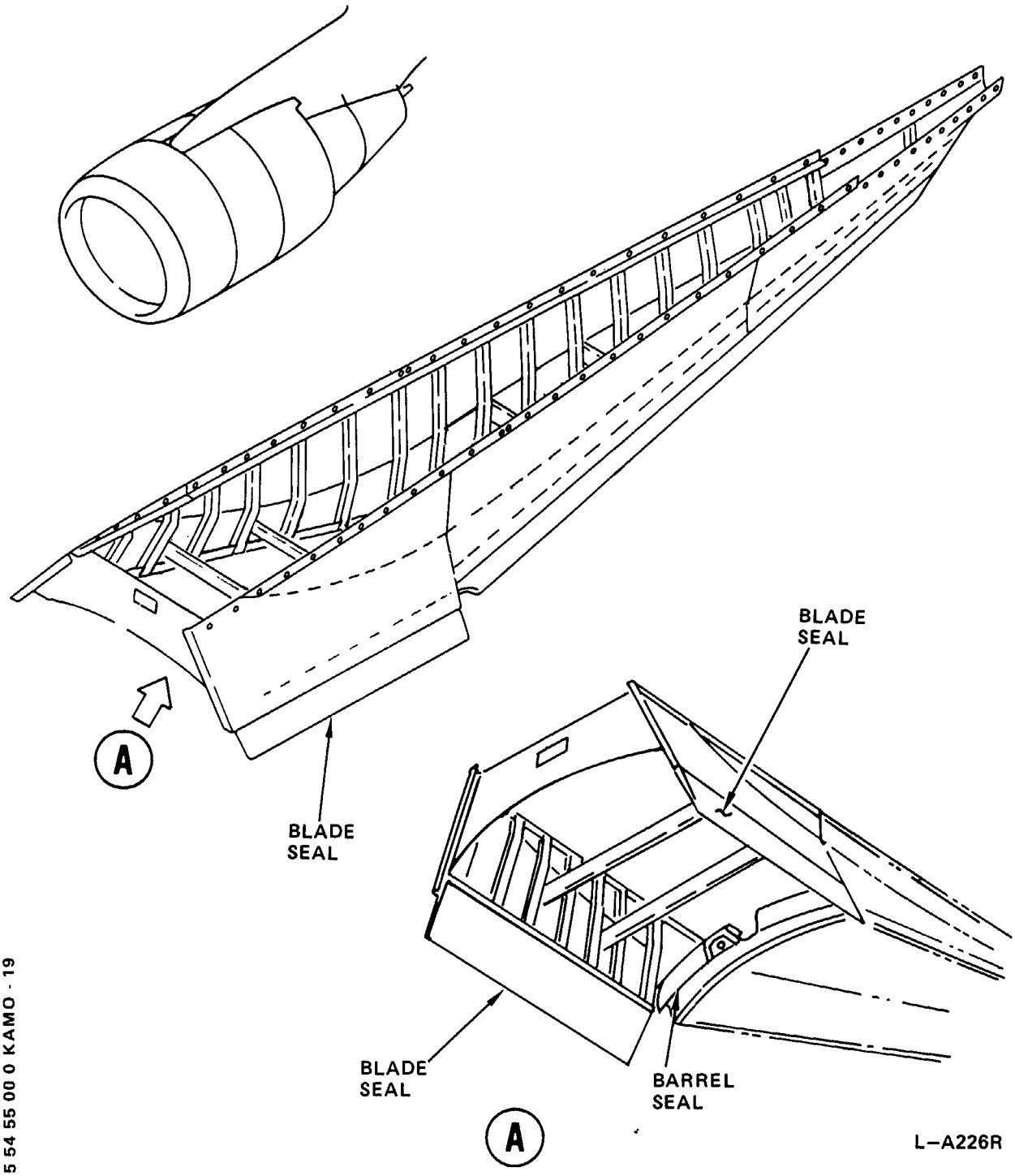
LOWER FAIRING - DESCRIPTION AND OPERATION

1. Description (Ref. Fig. 001)

A. General

The lower aft pylon fairing assembly is located on the lower surface of the aircraft engine support pylon aft of the thrust reverser doors. The fairing structure, which acts as a heat shield, consists of Inconel 718, aluminum and titanium. The lower aft pylon fairing assembly protects the engine support pylon from impingement by core engine exhaust gases which can reach temperatures of up to 1250°F (677°C). A concave bottom skin, which begins just forward of the engine exhaust exit plane, deflects the Crossflow or leakage of fan exhaust gases into the fairing interior is prevented by silicone rubber blade seals located on each side of the forward portion of the fairing and by a U-shaped silicone rubber barrel seal which is located on the bottom of the fairing parallel to and just forward of the exhaust exit plane.

The fairing is attached to the engine pylon with screws and mates at its forward end with the thrust reverser upper sidewall structure.



BM5 54 55 00 0 KAMO - 19

Lower Fairing Assembly
Figure 001

R 1. Lower Fairing Removal/Installation

CAUTION : WEIGHT OF THE LOWER FAIRING IS CONSIDERABLE, TAKE NECESSARY PROVISIONS TO SUPPORT IT.

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Torque Wrench Capable of 0.22 to 0.28 m.daN (20 - 25 lbf. in.)
(3)	Circuit Breakers Safety Clips
(4)Material No. 08-007A	Bonding and Adhesive Compounds (Ref. 20-31-00)
(5)Material No. 08-007C	Bonding and Adhesive Compounds (Ref. 20-31-00)
Referenced Procedure - 71-13-00, P. Block 301	Cowl Doors

B. Procedure

(1)Job Set-Up

(a)Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT.	LOCATION
22VU	ENG 1 and 2/FIRE EXTING SQUIB B/BTL1	5WE	207/C19
22VU	ENG 1 and 2/FIRE EXTING SQUIB B/BTL2	7WE	207/C20
133VU	ENGINES/ENG2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/IGNITION/ENG2/SYS A	8JH	333/T71
133VU	ENGINES/IGNITION/ENG1 & 2/SYS B	2JH	333/T72
133VU	ENGINES/IGNITION/ENG1/SYS A	1JH	334/S72
133VU	ENGINES/ENG1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG1 & 2/FIRE EXTING/SQUIB A/BTL 1	1WE	335/R71
133VU	ENGINES/ENG1 & 2/FIRE EXTING/SQUIB A/BTL 2	3WE	335/R72

(b)Install pylon access platform.

(c)Open cowl doors (Ref. 71-13-00, P. Block 301).

NOTE : Make certain that both reversers are swung open. This is to permit the leading edge of the aft fairing seal to tuck in under the tip of the rear circumferential edge of these doors.

(2)Removal

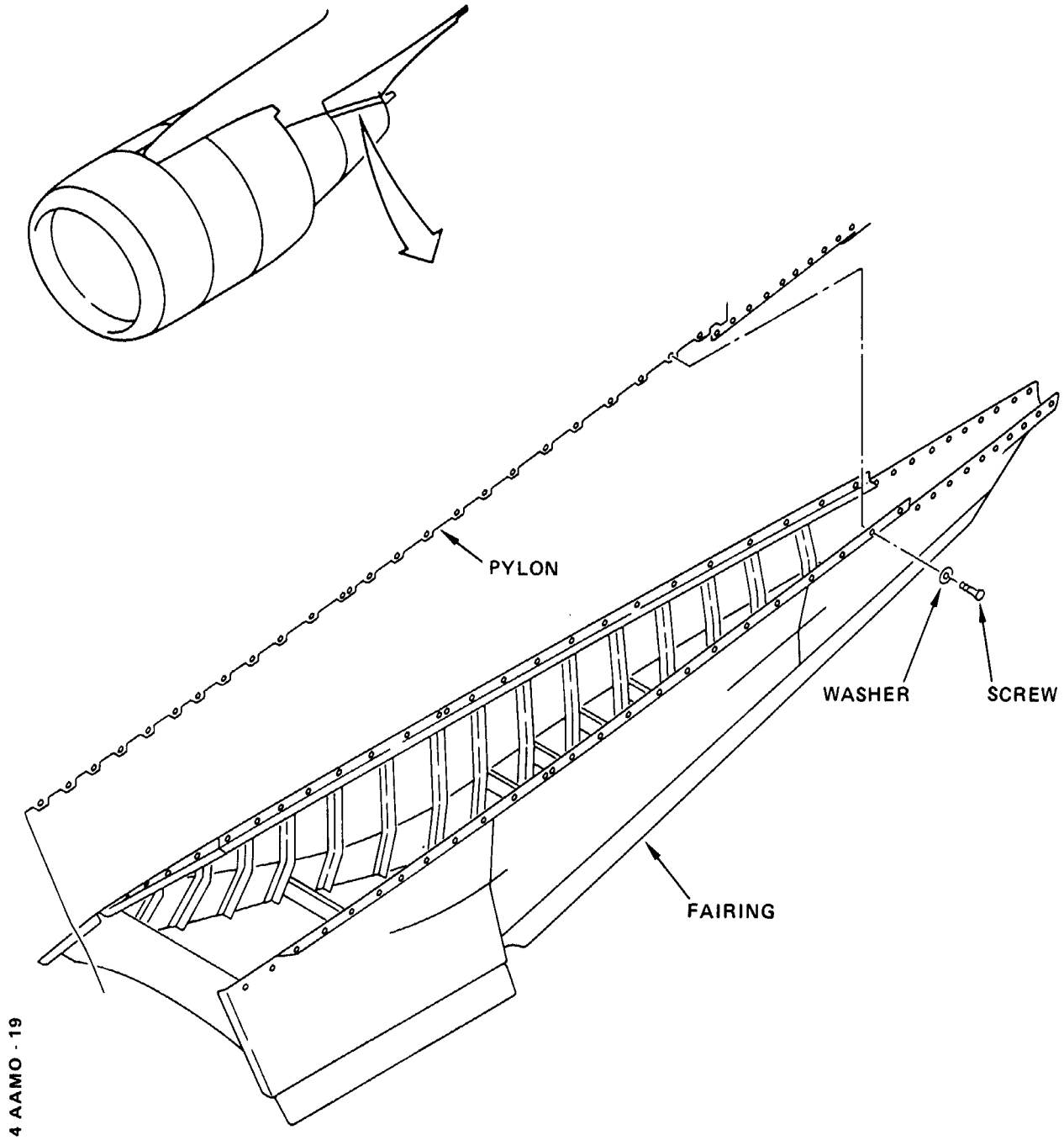
(Ref. Fig. 401)

(a)Remove screws and washers attaching fairing to pylon.

(b)Remove fairing from pylon by pulling it backward.

(3)Installation

(a)Position lower aft pylon fairing on pylon structure, bringing it up



Aft Lower Pylon Fairing Assembly - Removal/Installation
Figure 401

to the pylon with its top edge parallel with the lower edge of the pylon. Gently slide fairing forward horizontally until the fairing is in place.

CAUTION : DO NOT USE IMPACT FORCE ON THE AFT FAIRING TO ALIGN ATTACH SCREW HOLES AS DAMAGE TO THE FAIRING WILL OCCUR. IF THE HOLES FOR THE ATTACH SCREWS DO NOT IMMEDIATELY ALIGN, CAREFULLY ALIGN THEM USING A DRIFT.

(b)Install screws and washers attaching fairing assembly to pylon structure.

(c)Apply a small amount of Loctite (Material No. 08-007A) or (Material No. 08-007C) to the threads of the screws, in reference to the manufacturer's instructions.

(d)TORQUE screws to between 20 and 25 lbf.in. (0.22 and 0.28 m.daN).

(4)Close-Up

(a)Close cowl doors (Ref. 71-13-00, P. Block 301).

(b)Remove access platform.

(c)Remove safety clips and tags and close circuit breakers 1JH, 2JH, 1KG, 1KM, 2KM, 1WE, 3WE, 5WE and 7WE.

2. Blade Seal Removal/Installation

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Circuit Breakers Safety Clips
(3)Material No. 11-001A	Cleaning Agents (Ref. 20-31-00)
Referenced Procedure	
- 71-13-00, P. Block 301	Cowl Doors
- 78-11-01, P. Block 401	Exhaust Nozzle

B. Procedure

(1)Job Set-up

(a)Open, safety and tag the appropriate circuit breakers and open thrust reverser cowl doors (Ref. 71-13-00, P. Block 301).

(b)Install access platform.

(c)Remove Nozzle (Ref. 78-11-01, P. Block 401).

(2)Removal

(Ref. Fig. 402)

(a)Uncrimp, remove and discard rivets (9).

(b)Remove the blade seals (7) and the seal retainers (8). Save retainers for later use.

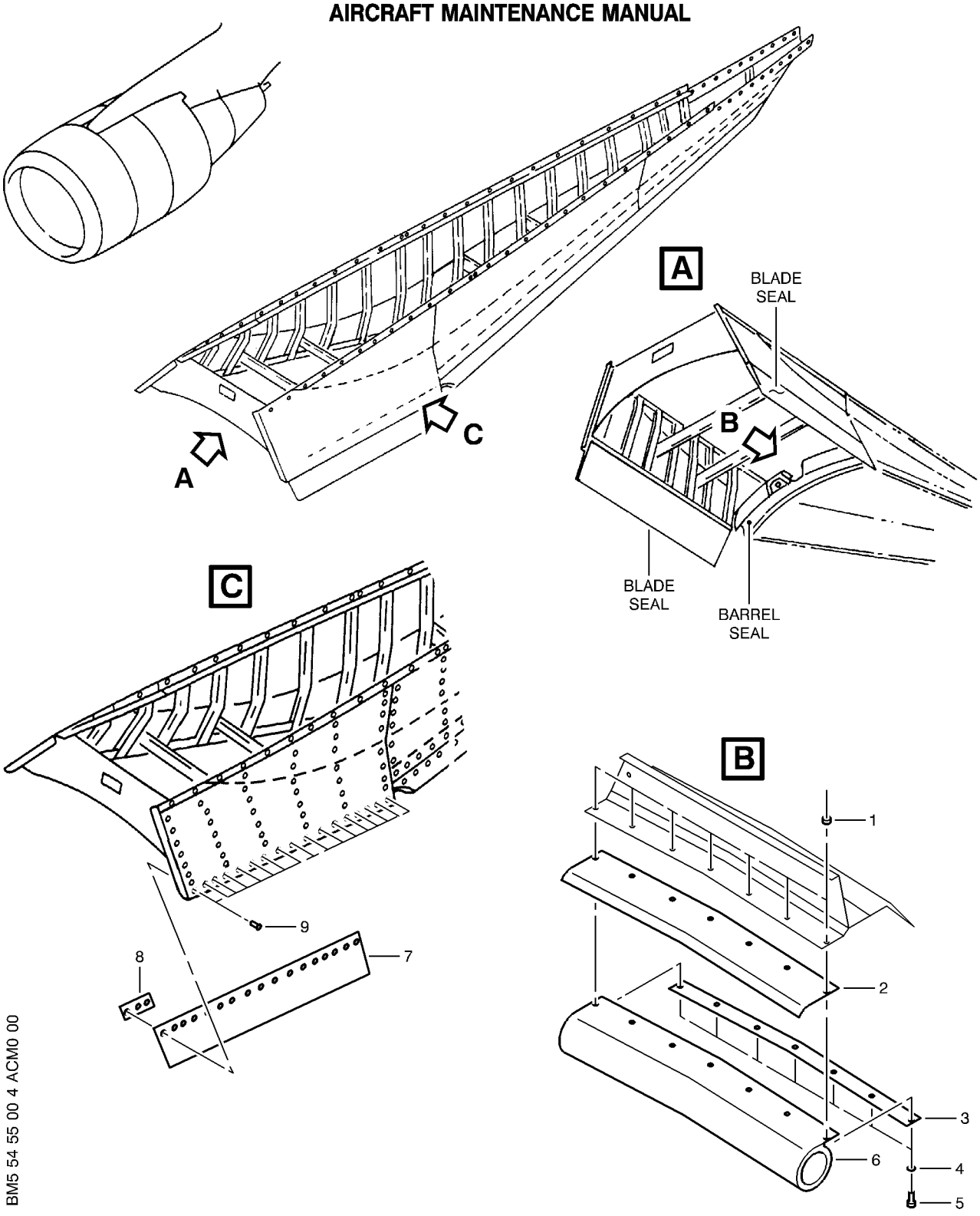
(3)Installation

(a)Position the new blade seals (7) on the lower aft pylon fairing and secure them with clamps approximately every 6 in.(152.39 mm).

NOTE : Use the old blade seals (7) as a guide for installation of the new seals.

(b)Transfer holes into the new blade seals using a 0.128 in.(3.25 mm) diameter drill. Use Cleco as required.

(c)Final-ream holes through the lower aft pylon fairing skin and the new



Removal of Blade Seal and Barrel Seal
Figure 402

R

blade seals to a 0.161 - 0.165 in.(4.09 - 4.19 mm) diameter. Use Cleco as required.

(d)Remove the blade seals (7) and deburr. Apply cleaning agents (Material No. 11-001A), wipe before evaporation and let dry for 5 mn at ambient temperature.

(e)Position the new blade seals (7) and the seal retainers (8) correctly on the lower aft pylon fairing and install and swage rivets (9).

(f)Perform final inspection of blade seals.

(4)Close Up

(a)Re-install the nozzle (Ref. 78-11-01, P. Block 401).

(b)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

(c)Remove access platform.

(d)Close thrust reverser cowl doors (Ref. 71-13-00, P. Block 301).

(e)Inspect and, if necessary, adjust cowl doors to maintain cowl loadshare (Ref. 71-13-00, P. Block 301).

(f)Remove safety clips and tags and close circuit breakers.

3. Barrel Seal Removal/Installation

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Circuit Breakers Safety Clips
(3)	Torque Wrench Capable of 0.27 and 0.30 m.daN (24 and 27 lbf.in)
(4)Material No. 11-001A	Cleaning Agents (Ref. 20-31-00)
Referenced Procedure	
- 71-13-00, P. Block 301	Cowl Doors
- 78-11-01, P. Block 401	Exhaust Nozzle

B. Procedure

(1)Job Set-up

(a)Open, safety and tag the appropriate circuit breakers and open thrust reverser cowl doors (Ref. 71-13-00, P. Block 301).

(b)Install access platform.

(c)Remove Nozzle (Ref. 78-11-01, P. Block 401).

(2)Removal (Ref. Fig. 402)

(a)Remove bolts (5) and washers (4) attaching barrel seal (6) to the lower aft pylon fairing. Save for later use.

(b)Remove the barrel seal (6) and retainers (3) and (2). Save the retainers for later use.

(3)Installation

(a)Position the new barrel seal (6) on the lower aft pylon fairing and secure it with clamps approximately every 6 in.(152.39 mm).

NOTE : Use the old barrel seal (6) as a guide for installation of the new seal.

(b)Final-ream holes through the lower aft pylon fairing skin and the new barrel seal to a 0.218 - 0.229 in.(5.54 - 5.81 mm) diameter. Use Cleco

as required.

(c)Remove the barrel seal (6) and deburr. Apply cleaning agents (Material No. 11-001A), wipe before evaporation and let dry for 5 mn at ambient temperature.

(d)Position the new barrel seal (6) and retainers (3) and (2) correctly and install bolts (5) and new washers (4) or those saved from steps (2) (a) and (2) (b).

(e)TORQUE bolts (5) to between 24 and 27 lbf.in.(0.27 and 0.30 m.daN).

(f)Perform final inspection of barrel seal.

(4)Close-up

(a)Re-install the nozzle (Ref. 78-11-01, P. Block 401).

(b)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

(c)Remove access platform.

(d)Close thrust reverser cowl doors (Ref. 71-13-00, P. Block 301).

(e)Inspect and, if necessary, adjust cowl doors to maintain cowl loadshare (Ref. 71-13-00, P. Block 301).

(f)Remove safety clips and tags and close circuit breakers.

LOWER FAIRING - REMOVAL/INSTALLATION

1. General

This procedure provides instructions for removal and installation of the pylon aft fairing.
Removal/Installation is identical for both engine pylons.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
B.	Torque Wrench 24 to 27 lbf. in. (0.27 to 0.30 m.daN)
C.Material No. 08-007A	Bonding and Adhesive Compounds (Ref. 20-31-00)
D.Material No. 08-007C	Bonding and Adhesive Compounds (Ref. 20-31-00)

3. Procedure

A. Job Set-Up
(1)Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 2	7WE	207/C20
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL 1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL 2	3WE	335/R72

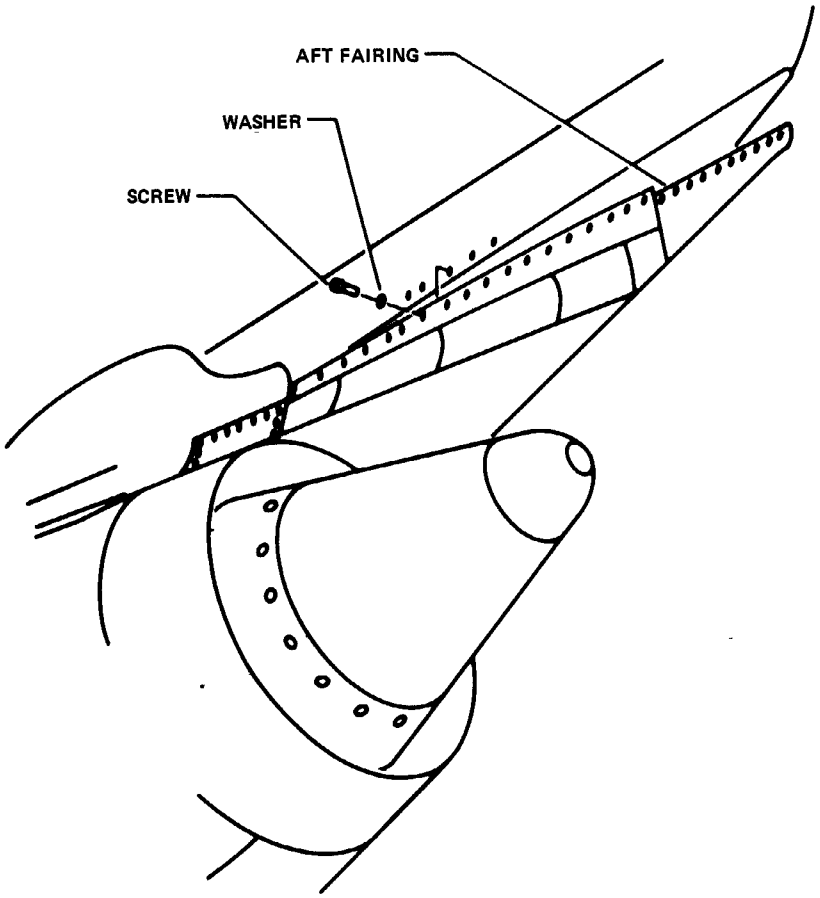
(2)Position access platform.

B. Removal of Pylon Lower Fairing (Ref. Fig. 401)
CAUTION : PROVIDE ADEQUATE SUPPORT. FAIRING WEIGHS APPROXIMATELY 85 LBS (39 KG).
(1)Remove screws and washers attaching aft fairing to pylon and aft edge of forward fairing.
(2)Remove fairing from pylon.

C. Installation of Pylon Lower Fairing (Ref. Fig. 401)
(1)Position aft fairing on pylon and slide forward edge of fairing under aft edge of forward fairing.
(2)Install aft fairing to pylon and forward fairing with screws and washers.
(3)Apply a small amount of Loctite (Material No. 08-007A) or (Material No. 08-007C) to the threads of the screws.

(4)TORQUE screws to between 24 and 27 lbf.in. (0.27 to 0.30 m.daN).

D. Close-Up
(1)Remove access platform.
(2)Remove safety clips and tags and close circuit breakers 1JH, 2JH, 1KG, 1KM, 2KM, 1WE, 3WE, 5WE and 7WE.



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Removal/Installation of Pylon Lower Fairing
Figure 401

R 1. Inspection of the Lower Fairing and Lower Fairing Seals

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Circuit Breakers Safety Clips

Referenced Procedure
- SRM/54-55-51, P. Block 101

B. Procedure

(1)Job set-up
(a)Open, safety and tag the following circuit breakers:

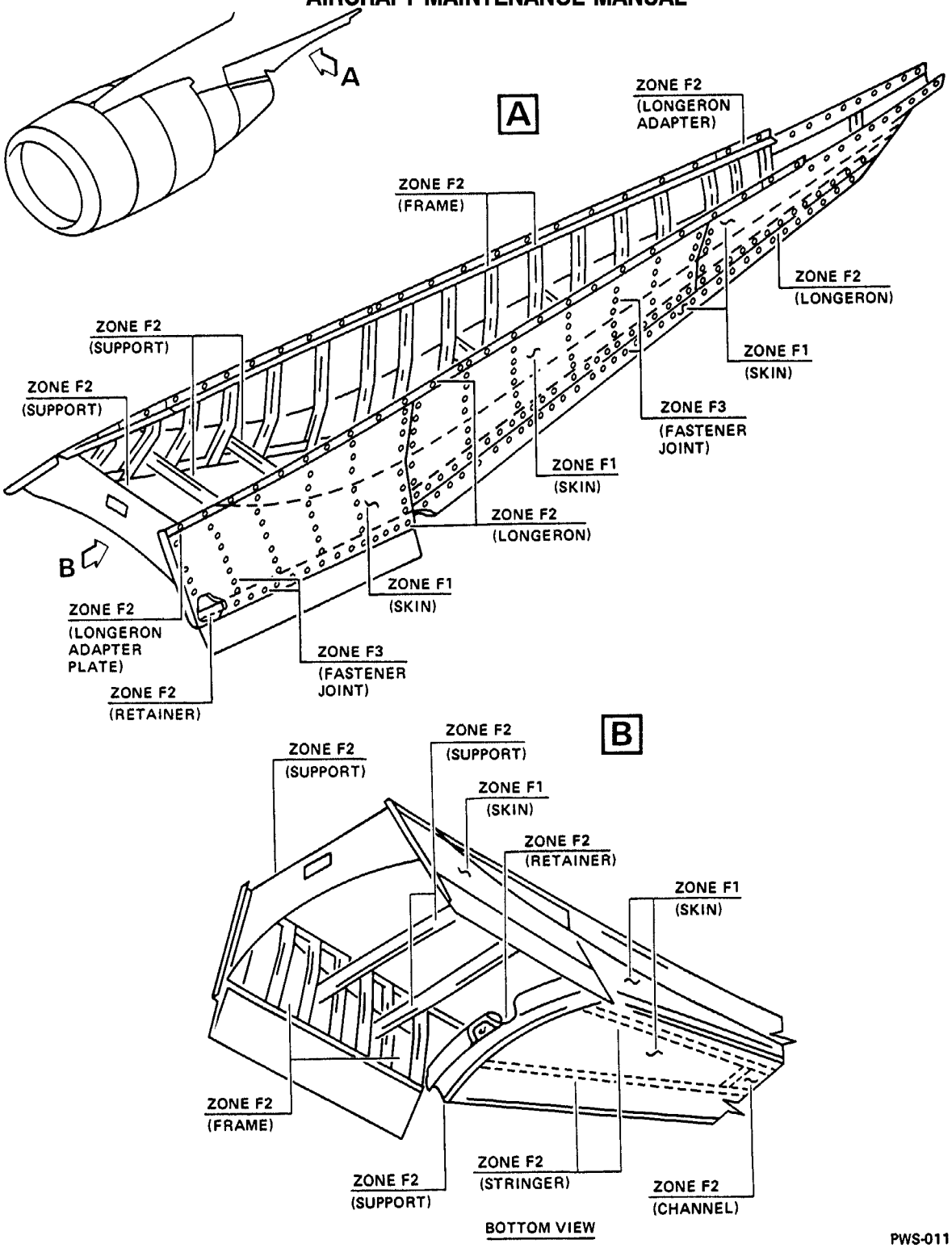
PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL2	7WE	207/C20
133VU	ENGINES/ENG2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG1/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG1 & 2/FIRE EXTING/SQUIB A/BTL 1	1WE	335/R71
133VU	ENGINES/ENG1 & 2/FIRE EXTING/SQUIB A/BTL 2	3WE	335/R72
133VU	ENGINES/ENG2/IGNITION/SYS A	8JH	333/T71

(b)Install access platform.
(2)Inspection (Ref. Fig. 601)
(a)Do an inspection of the lower fairing.
(b)Make sure that there is no damage (buckles, cracks, dents, gouges,
R nicks, scratches, missing rivets/fasteners) (Ref SRM/54-55-51,
P. Block 101).
R (3)Examine the lower aft pylon fairing seals for damage.

R EXAMINE	RESULTS	DISPOSITION
R Lower Aft Pylon Fairing Seals		
R Blade Seals	Damaged, discolored, worn, or with cracks.	Permitted. Replace the seal at next engine/nozzle removal, not

EXAMINE	RESULTS	DISPOSITION
		exceeding 4C.
	Any portion missing.	Not permitted. Replace the seal.
Barrel Seal	Damaged, discolored, worn, or with cracks, however the seal should have the rubber intact with no holes or delamination.	Permitted. Replace the seal at next engine/nozzle removal, not exceeding 4C.
	Deterioration greater than any of these conditions.	Not permitted. Replace the seal.

(4)Close-up
(a)Remove access platform.
(b)Remove safety clips and tags and close circuit breakers.



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Lower Fairing - Inspection Area
Figure 601

PYLON-TO-NACELLE FILLETS-FITTINGS - GENERAL

1. General

Junction fillets are installed on the main frame to provide an aerodynamic profile between the pylon and nacelle. The junction fillets also prevent engine fire propagation. The pylon main frame is equipped with various fittings which enable attachment of pylon-to-engine interface equipment. Engine cowl hinge fittings are secured to the forward fairing.

2. Description

A. Junction Fillets

The junction fillets are riveted on the side panels of the pylon main frame between RIBs1 and 10. They are made of steel sheet metal plates and fitted with a metal seal providing sealing between the main frame side panels and engine cowls.

B. Fittings on Main Frame

Main frame fittings are positioned as follows :

- fan thrust reverser cowl opening actuator fitting at RIB1.
- fan thrust reverser cowl attach fitting at RIB2.
- precooler cold air inlet duct attach fittings between RIB1 and RIB2, RIB4 and RIB5 on pylon L side only. Connection between the attach fittings and the duct is achieved by means of two adjustable rods.
- heat shield and hydraulic and fuel junction box attach fittings between RIB1 and RIB2, RIB4 and RIB5.
- engine hoist fittings at RIB6.

(Ref. Fig. 001)
(Ref. Fig. 002)

C. Hinge Fittings on Forward Fairing

They are positioned as follows :

- fan cowl hinge fittings at RIBJ1, RIBJ3 and RIBJ5.
- fan thrust reverser cowl hinge fittings at RIBJ7 and RIBJ08.

(Ref. Fig. 003)

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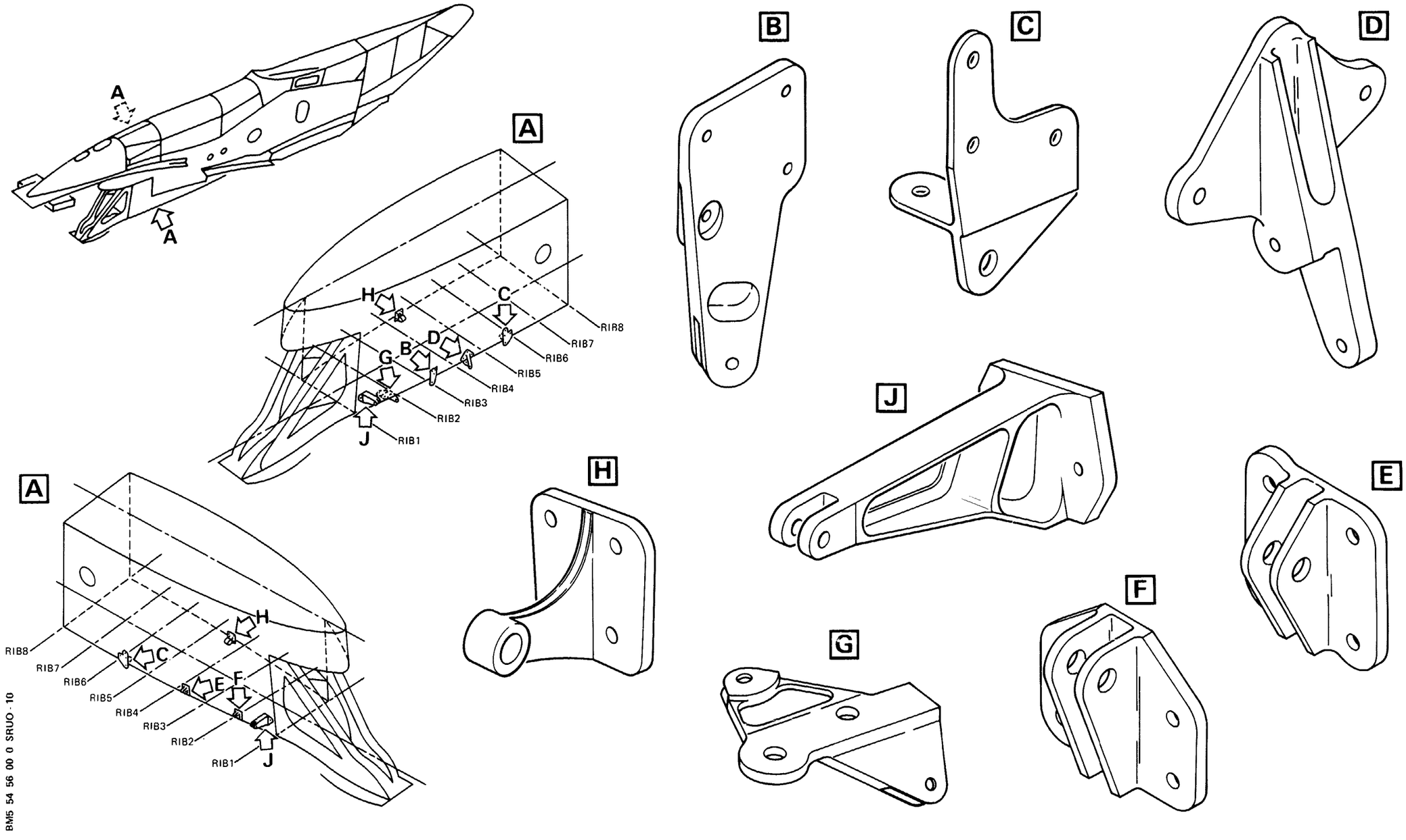
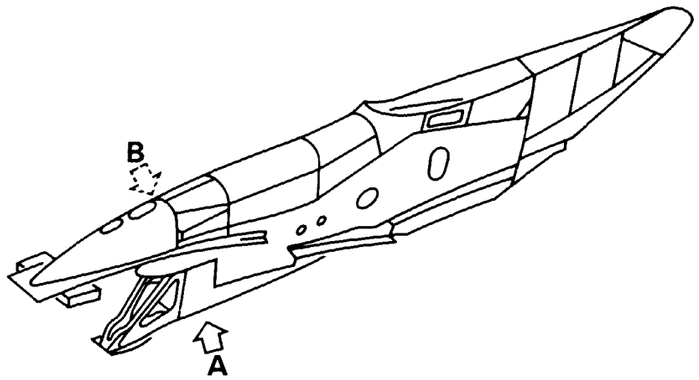
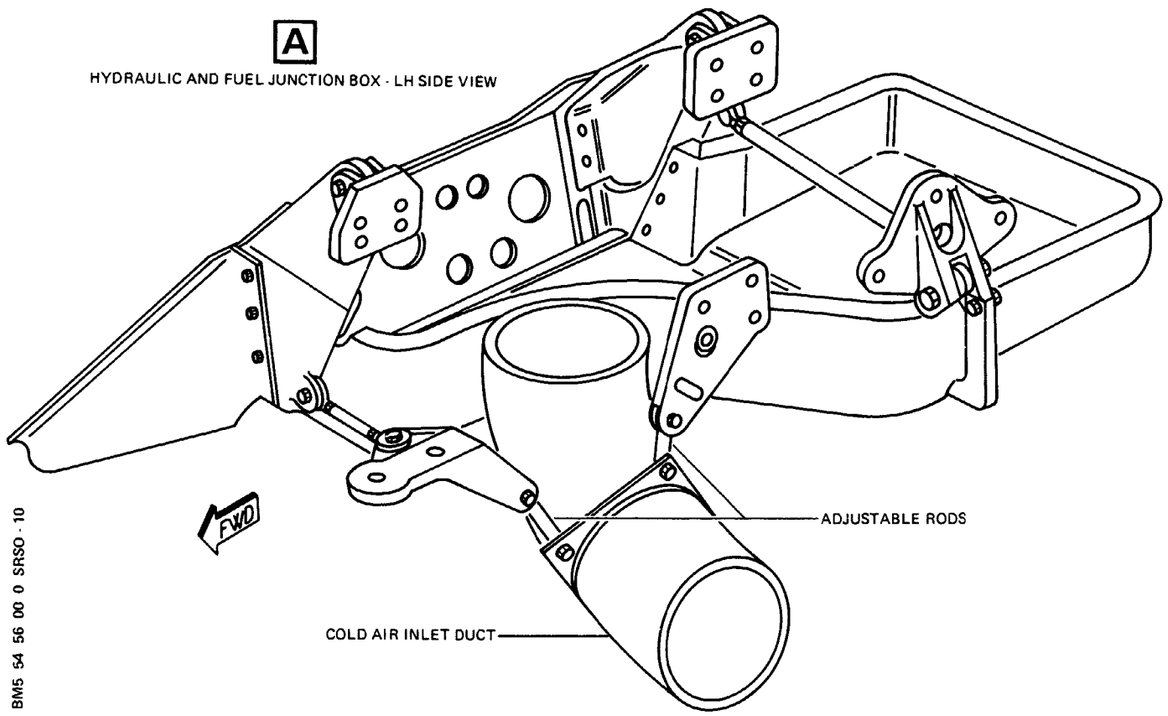


Main Frame Hinge and Hoist Fittings
Figure 001



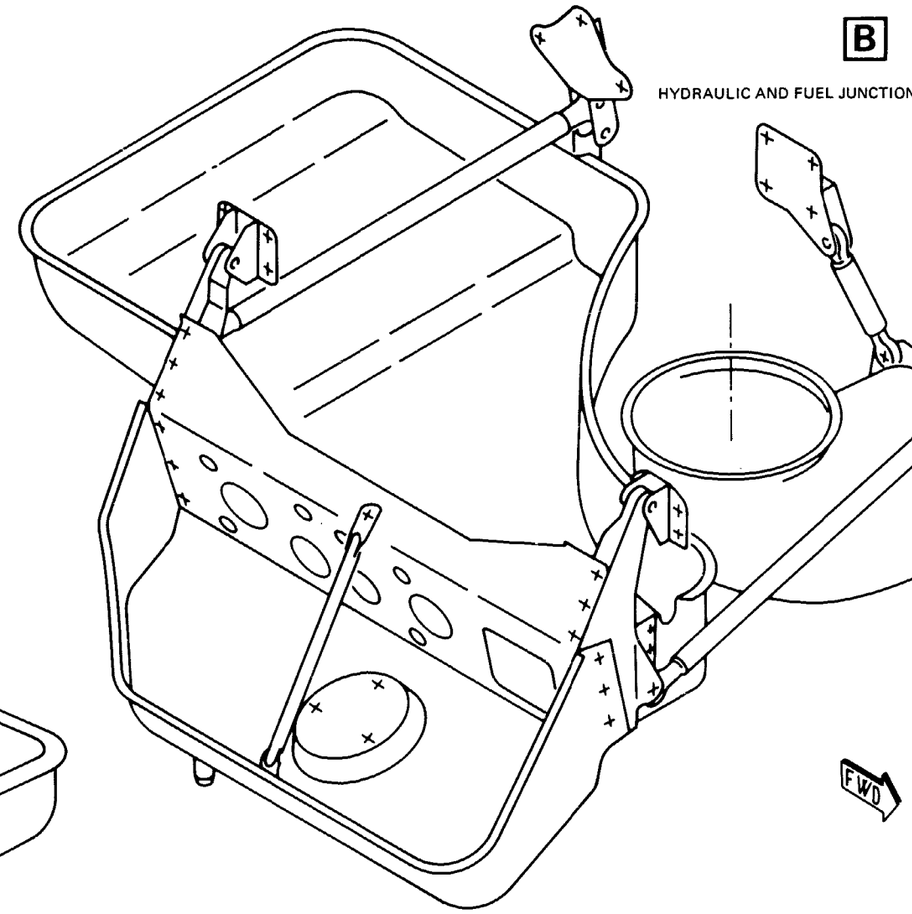
A

HYDRAULIC AND FUEL JUNCTION BOX - LH SIDE VIEW



B

HYDRAULIC AND FUEL JUNCTION BOX - RH SIDE VIEW



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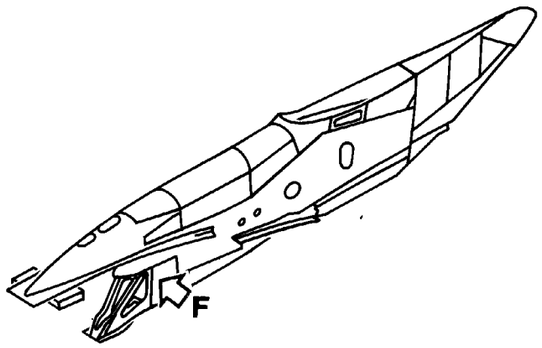
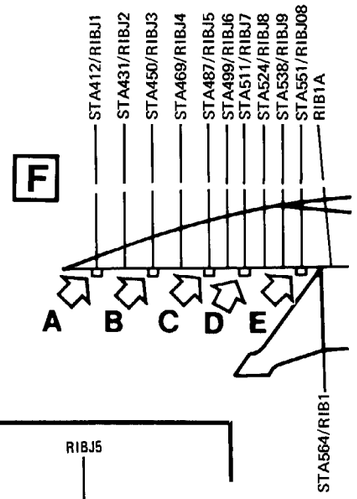
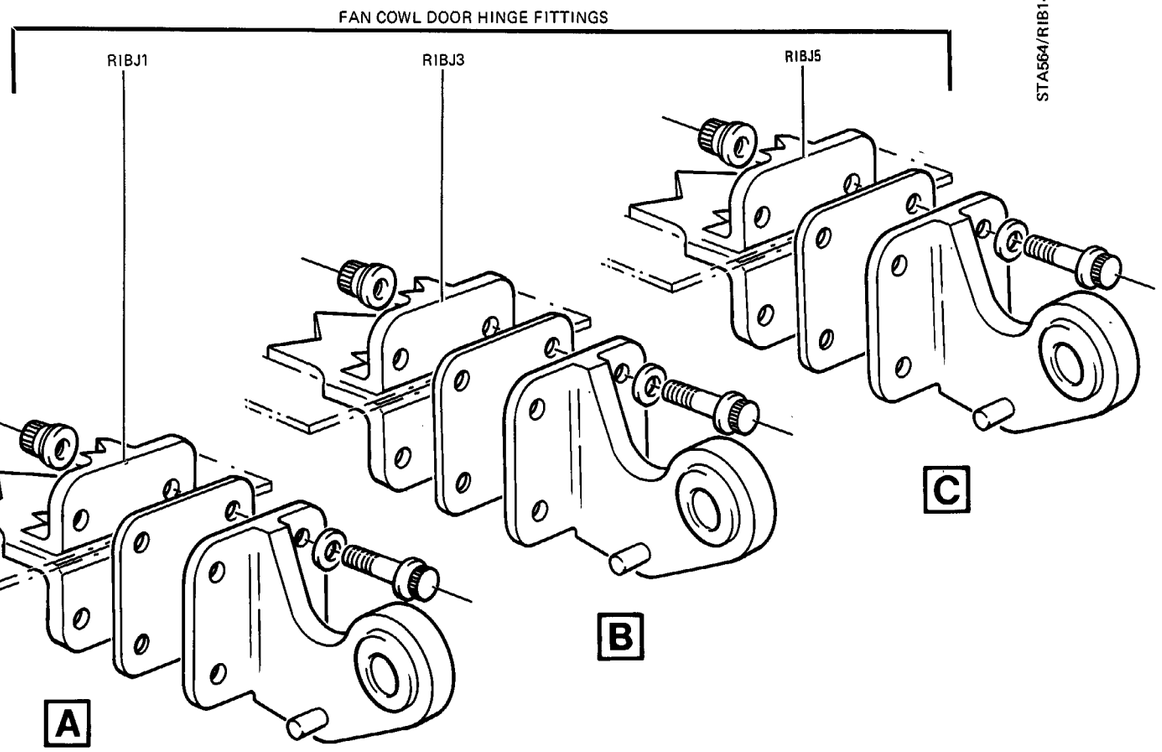
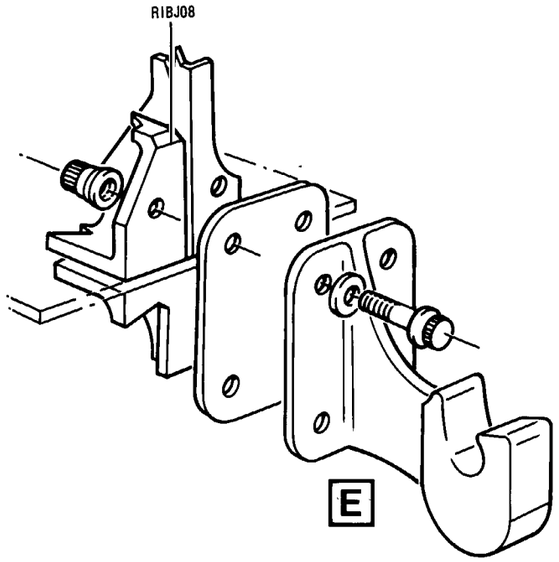
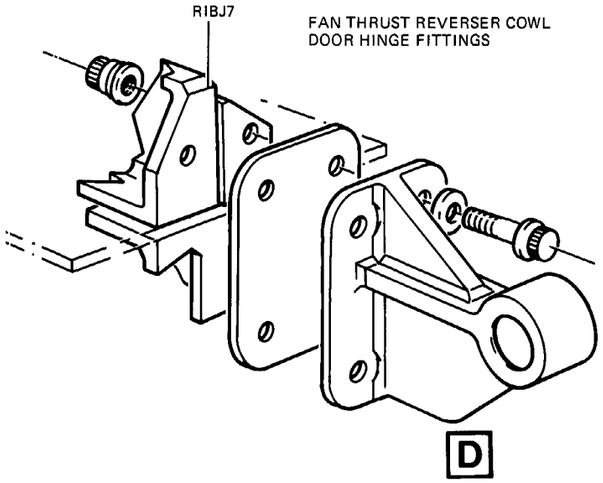
Hydraulic and Fuel Junction Box
Figure 002











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Engine Cowl Hinge Fittings
Figure 003

PYLON-TO-NACELLE JUNCTION - DESCRIPTION AND OPERATION

1. General

Junction fillets are installed on the pylon box to provide an aerodynamic profile between pylon and nacelle. The junction fillets also prevent engine fire propagation.
Engine cowl hinge fittings are attached to the forward fairing and pylon box.

2. Description

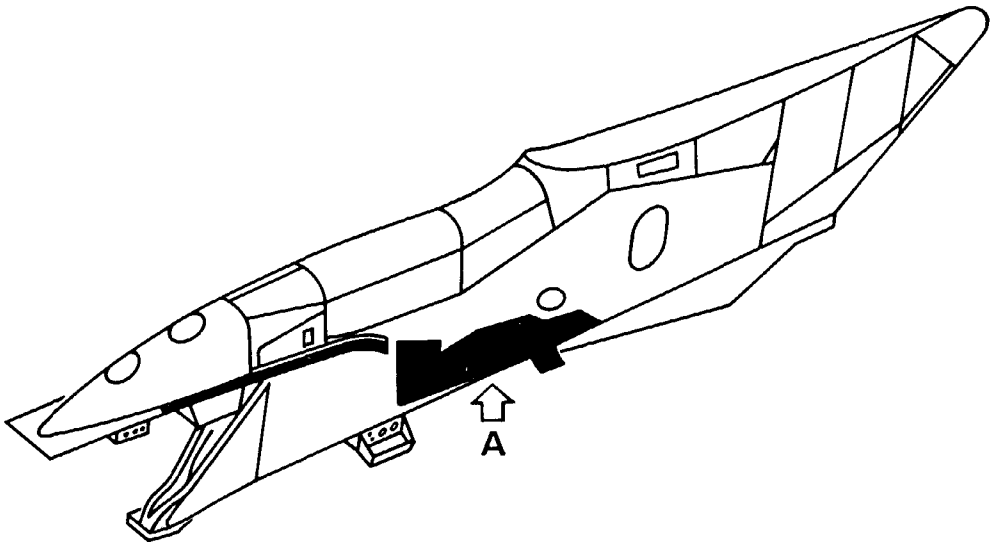
A. Junction Fillets

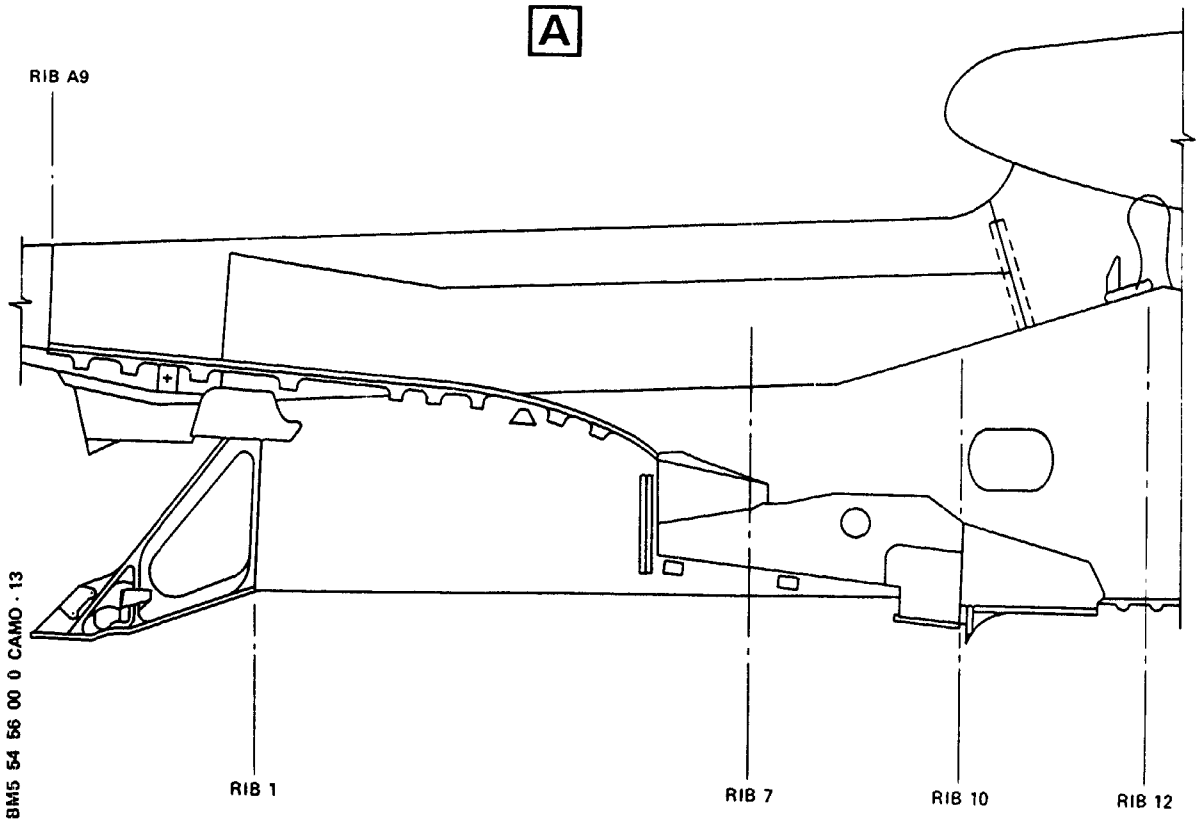
(Ref. Fig. 001)
The junction fillets are riveted on cantilever structure and side panels of the pylon box between RIBsA9 and 12.
Pylon-to-engine cowls junction between RIBsA9 and 6 is provided by a sheet metal formed section rivetted on pylon structure.
Fairings are installed between pylon RIBs6 and 12 to provide junction with fan thrust reverser and core cowl.

B. Auxiliary Fittings

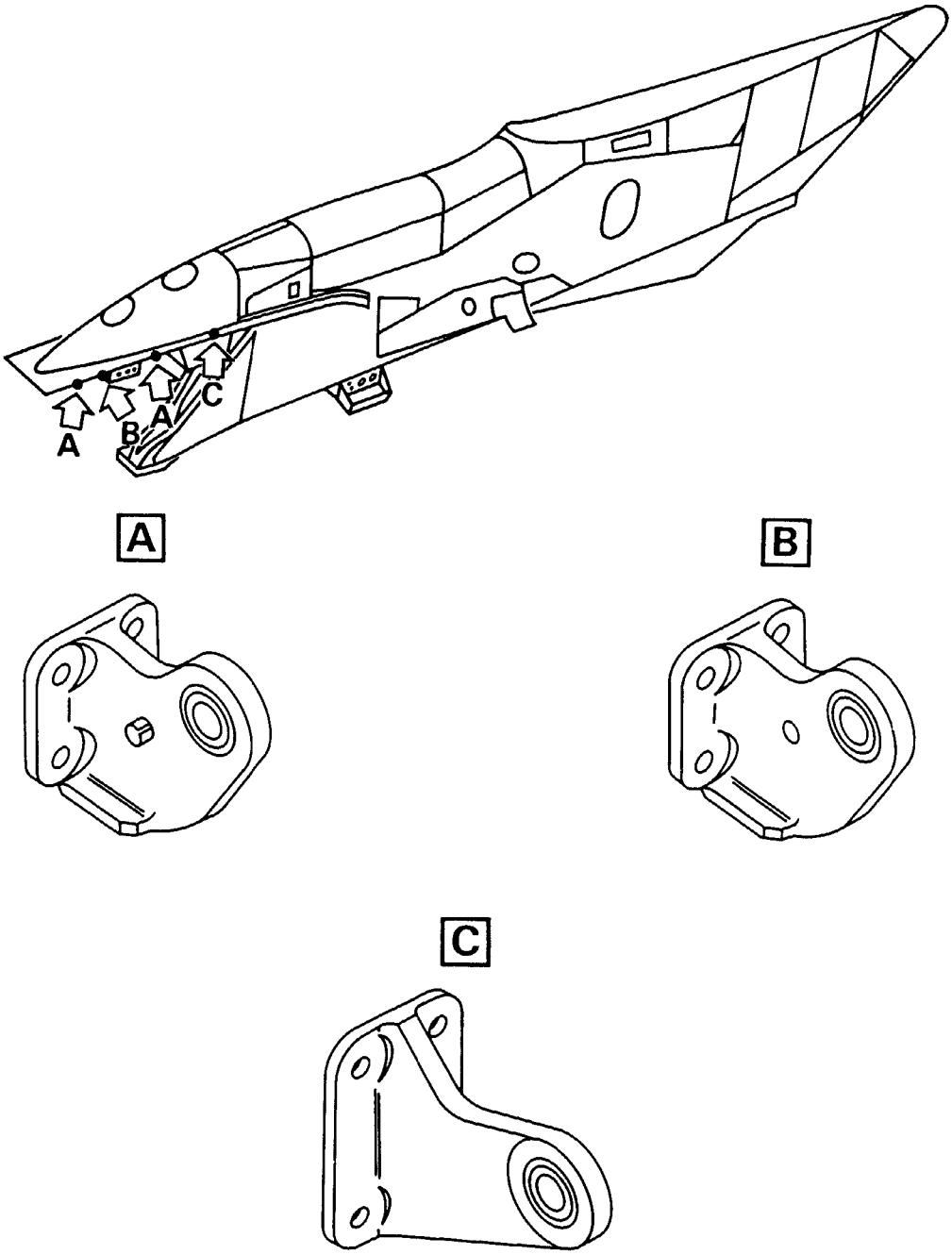
(1) Cowl hinge fittings
(Ref. Fig. 002)
(Ref. Fig. 003)
- fan cowl hinge fittings are attached to cantilever beam at RIBsA1, A4 and A8.
- thrust reverser cowl hinge fittings are attached to the pylon box and cantilever beam at RIBsA11, 2 and 4.
- core cowl hinge fittings are attached to the pylon box at RIBs6, 8 and 9.

(2) Hoist fitting
(Ref. Fig. 004)
A hoist fitting located between RIBs6 and 7 of pylon box enables attachment of engine hoisting tool.





Pylon-to-Nacelle Junction Fillets
Figure 001



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Cantilever Structure - Cowl Hinge Fittings
Figure 002

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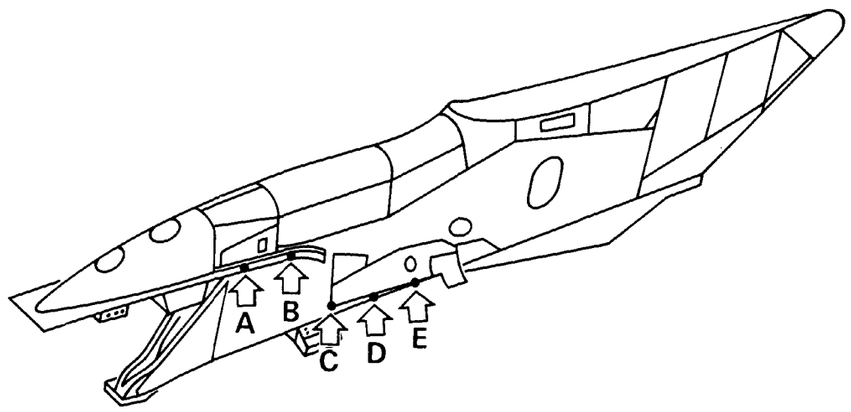

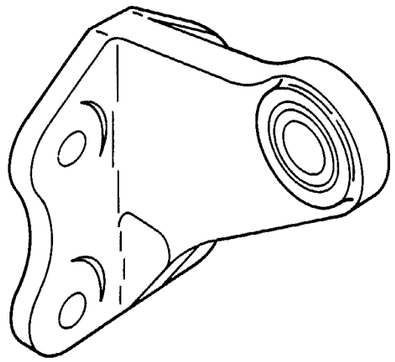

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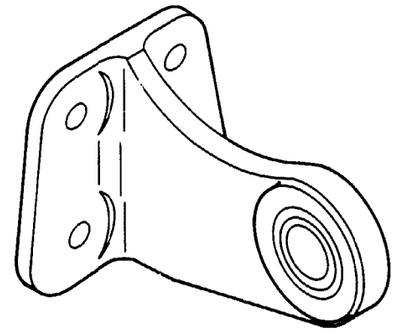

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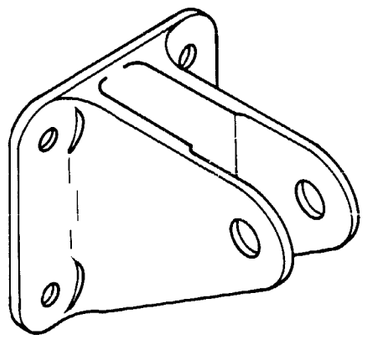

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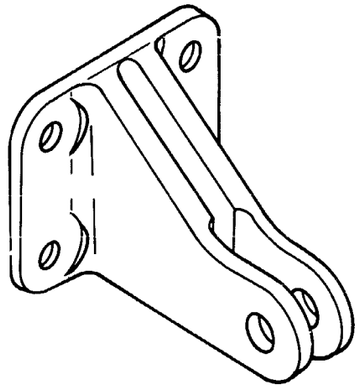

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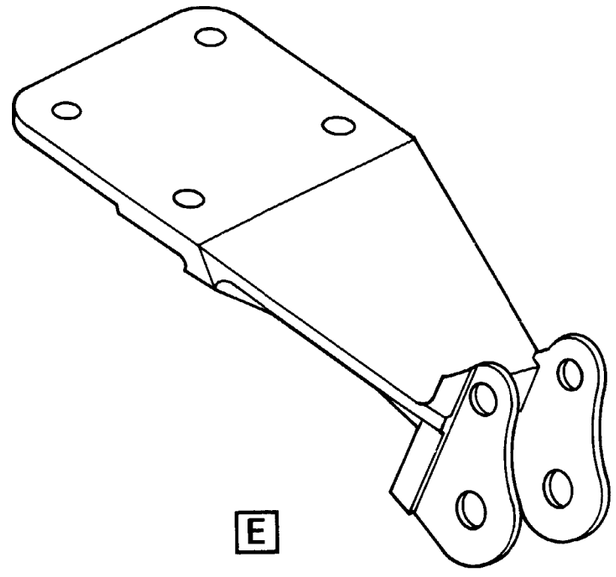

E

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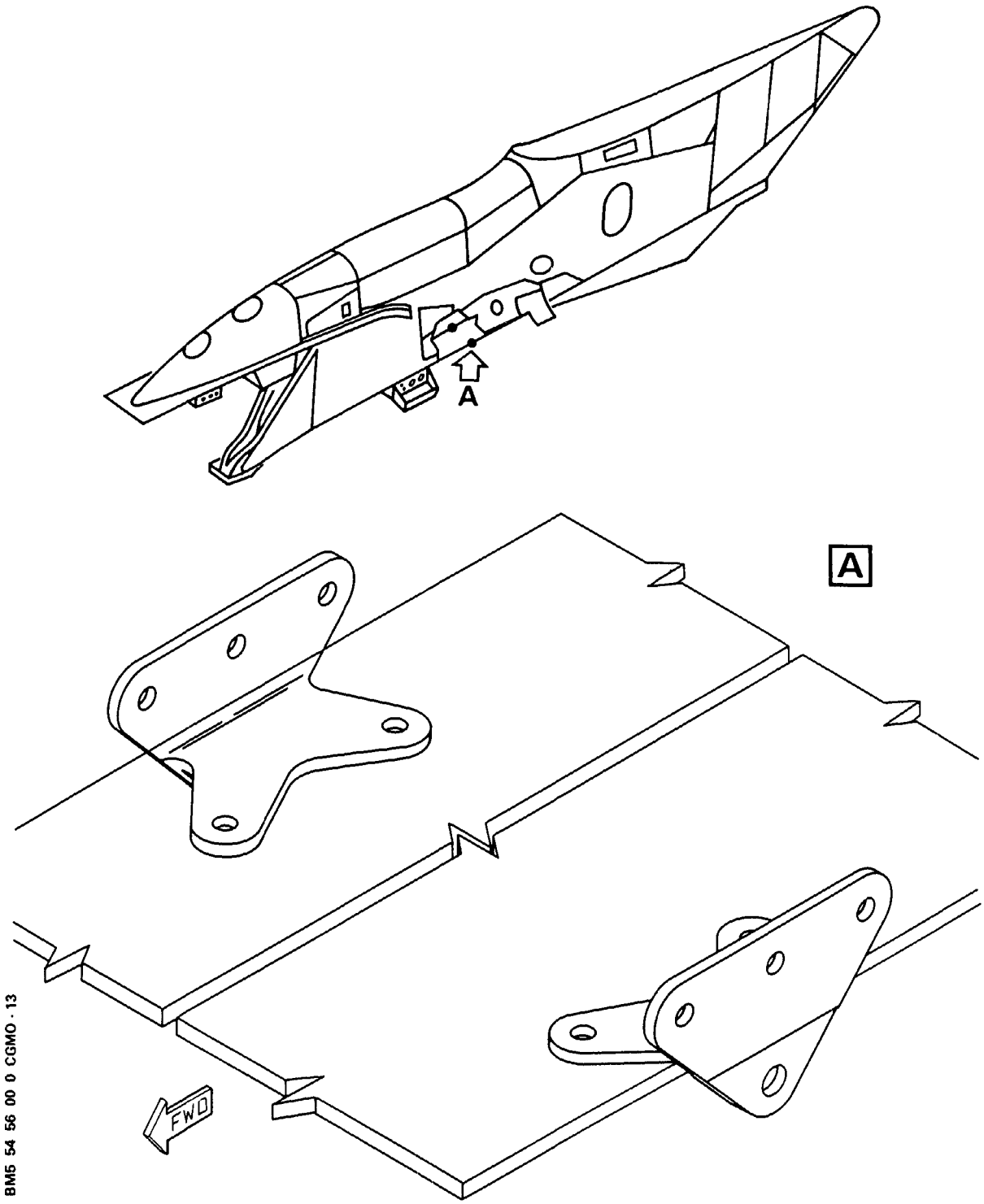
Pylon Box - Cowl Hinge Fittings
Figure 003



Hoist Fitting
Figure 004

HINGE FITTING - FAN AND THRUST REVERSER - REMOVAL/INSTALLATION

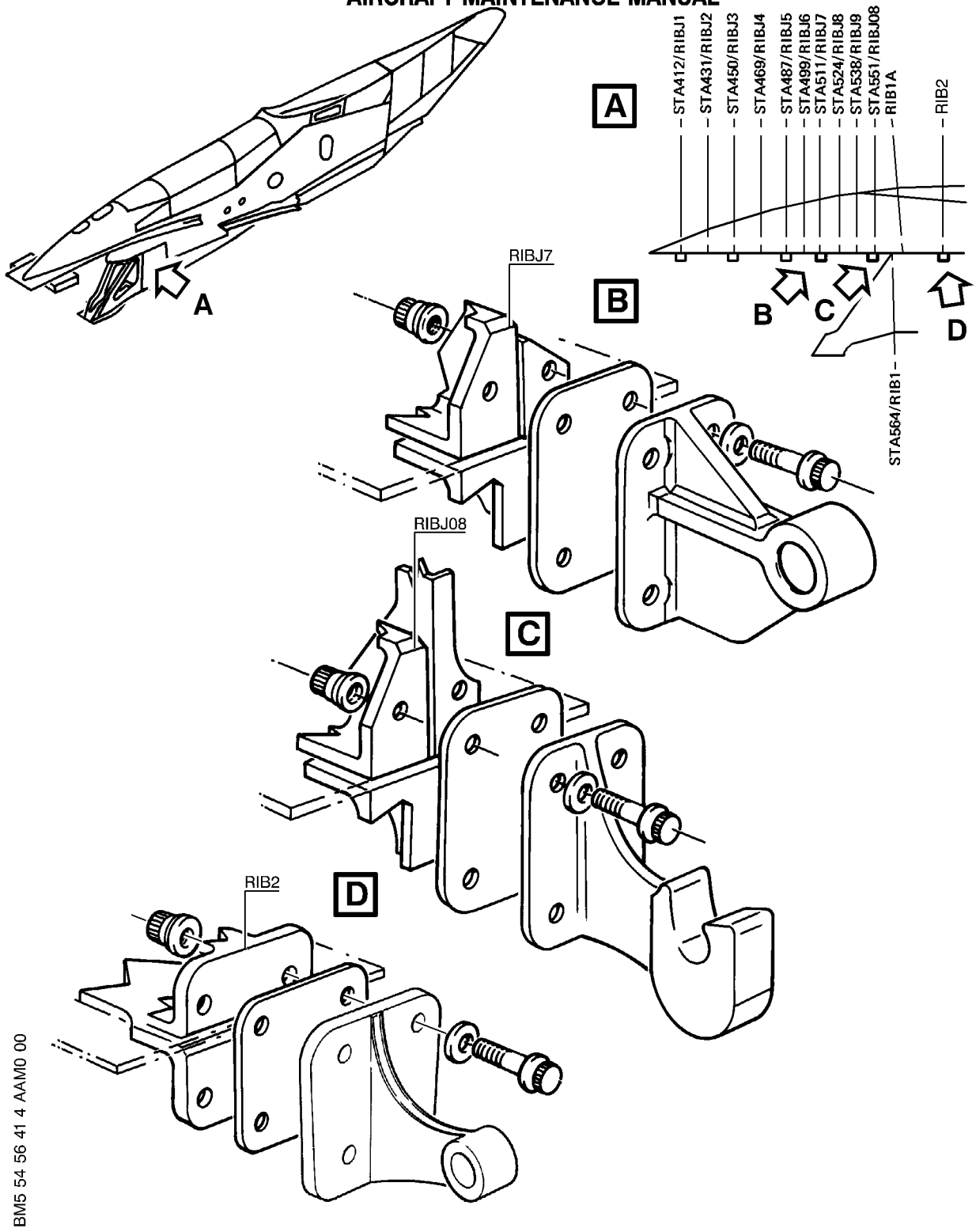
1. Fan Reverser Hinge Fittings

A. Reason for the Job
Removal of hinge fittings and installation of the hinge fittings removed (no replacement of the hinge fittings).

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platforms
Referenced Procedures	
- 20-21-12, P. Block 1	Tightening Torques for Standard Threaded Fasteners
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-43, P. Block 401	Upper Panel Rods Between RIBS1 and 8
- 71-13-02, P. Block 401	Fan Cowl
- 71-13-03, P. Block 401	Fan Thrust Reverser Cowl

C. Procedure
(1)Job set-up
(a)Remove engine cowls (Ref. 71-13-02, 71-13-03, P. Block 401).
(b)Position access platforms at pylons.
(c)Remove the following side skin panels from pylons :
411DL (421DL), 412DR (422DR), 413AL (423AL), 413BL (423BL), 413CL (423BL), 413CL (423CL) and 414AR (424AR).
(d)Remove bleed air precooler (Ref. 36-11-15, P. Block 401).
WARNING : MAKE CERTAIN THAT FLAP AND SLAT CONTROL LEVER LOCKING TOOL IS INSTALLED IN FLIGHT COMPARTMENT.
(e)Remove the two rods from main frame upper panel between RIB1 and RIB8 (Ref. 54-51-43, P. Block 401).
(f)Remove bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).
(2)Removal (Ref. Fig. 401)
NOTE : Before removal, mark location of shims.
(a)Remove bolts securing hinge fittings and retain washers and nuts. Record location of bolts, nuts and washers for installation.
(b)Remove hinge fittings and retain shims located under hinge fitting base (Ref. Fig. 401).
(3)Check
(a)Before installation, carry out a visual check of hinge fittings.
(b)Check condition of shims retained at removal. They must not show evidence of wear or cracks around bolt attach holes.
(c)Check washers, nuts and bolts retained at removal for correct condition.
Replace as necessary.
(4)Installation (Ref. Fig. 401)
(a)Install shims under hinge fitting base in accordance with



Fan Reverser Hinge Fittings - Removal/Installation
Figure 401

the location recorded at removal.

NOTE : If necessary, adjust the shim, taking into account the thickness of a doubler introduced by a repair in the hinge fitting base area, to maintain the original interchangeability location.

(b)Insert bolts in holes of hinge fitting base (Ref. Fig. 401)

(c)Install hinge fittings on structure. Install bolts, washers and screws nuts without tightening.

(d)TORQUE bolts attaching hinge fittings (Ref. 20-21-12, P. Block 1).

(5)Close-up

(a)Install bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).

(b)Install the two rods on main frame upper panel (Ref. 54-51-43, P. Block 401).

(c)Install bleed air precooler (Ref. 36-11-15, P. Block 401).

(d)Install side skin panels : 411DL (421DL), 412DR (422DR), 413Al (423AL), 413BL (423BL), 413CL (423BL), 413CL (423CL) and 414AR (424AR).

(e)Remove pylon access platforms.

(f)Install engine cowls (Ref. 73-13-02, 71-13-03, P. Block 401).

HINGE FITTING - FAN AND THRUST REVERSER - REMOVAL/INSTALLATION

1. Fan Reverser Hinge Fittings

A. Reason for the Job
Removal of hinge fittings and installation of the hinge fittings removed (no replacement of the hinge fittings).

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platforms
Referenced Procedures	
- 20-21-12, P. Block 1	Tightening Torques for Standard Threaded Fasteners
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-43, P. Block 401	Upper Panel Rods Between RIBS1 and 8
- 71-13-01, P. Block 401	Core Cowl
- 71-13-02, P. Block 401	Fan Cowl
- 71-13-03, P. Block 401	Fan Thrust Reverser Cowl

C. Procedure
(1)Job set-up
(a)Remove engine cowls (Ref. 71-13-01, 71-13-02, 71-13-03, P. Block 401).
(b)Position access platforms at pylons.
(c)Remove the following side skin panels from pylon :
1 On left side pylon, remove panels : 413AL (414AR), 411DL (412DL), 413BL and 413CL (414CR).
2 On right side pylon, remove panels : 423AL (424AR), 421DL (422DR), 423BL and 423CL (424CL).
(d)Remove bleed air precooler (Ref. 36-11-15, P. Block 401).
WARNING : MAKE CERTAIN THAT FLAP AND SLAT CONTROL LEVER LOCKING TOOL IS INSTALLED IN FLIGHT COMPARTMENT.
(e)Remove the two rods from main frame upper panel between RIB1 and RIB8 (Ref. 54-51-43, P. Block 401).
(f)Remove bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).
(2)Removal (Ref. Fig. 401)
NOTE : Before removal, mark the shim location.
NOTE : The removal procedure is described for left pylon left side. This procedure is identical for the other sides of the engine pylon.
(a)Remove bolts securing hinge fittings and retain washers and nuts. Record location of bolts, nuts and washers for installation.
(b)Remove hinge fittings and collect shims located under hinge fitting base (Ref. Fig. 401).
(3)Check
(a)Before installation, carry out a visual check of hinge fittings.
(b)Check condition of shims. They must not show evidence of wear or cracks

around bolt attach holes. Check that the 4 washers bonded to shims are present.

(c)Check washers, nuts and bolts retained at removal for correct condition.
Replace as necessary.

(4)Installation (Ref. Fig. 401)

(a)Install shims under hinge fitting base in accordance with the location recorded at removal.
NOTE : If necessary, adjust the shim, taking into account the thickness of a doubler introduced by a repair in the hinge fitting base area, to maintain the original interchangeability location.

(b)Install hinge fittings on main frame or auxiliary structure. Install bolts, washers and screws (Ref. Fig. 401).

(c)TORQUE bolts attaching hinge fittings (Ref. 20-21-12, P. Block 1).

(5)Close-up

(a)Install bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).

(b)Install the two rods on main frame upper panel (Ref. 54-51-43, P. Block 401).

(c)Install bleed air precooler (Ref. 36-11-15, P. Block 401).

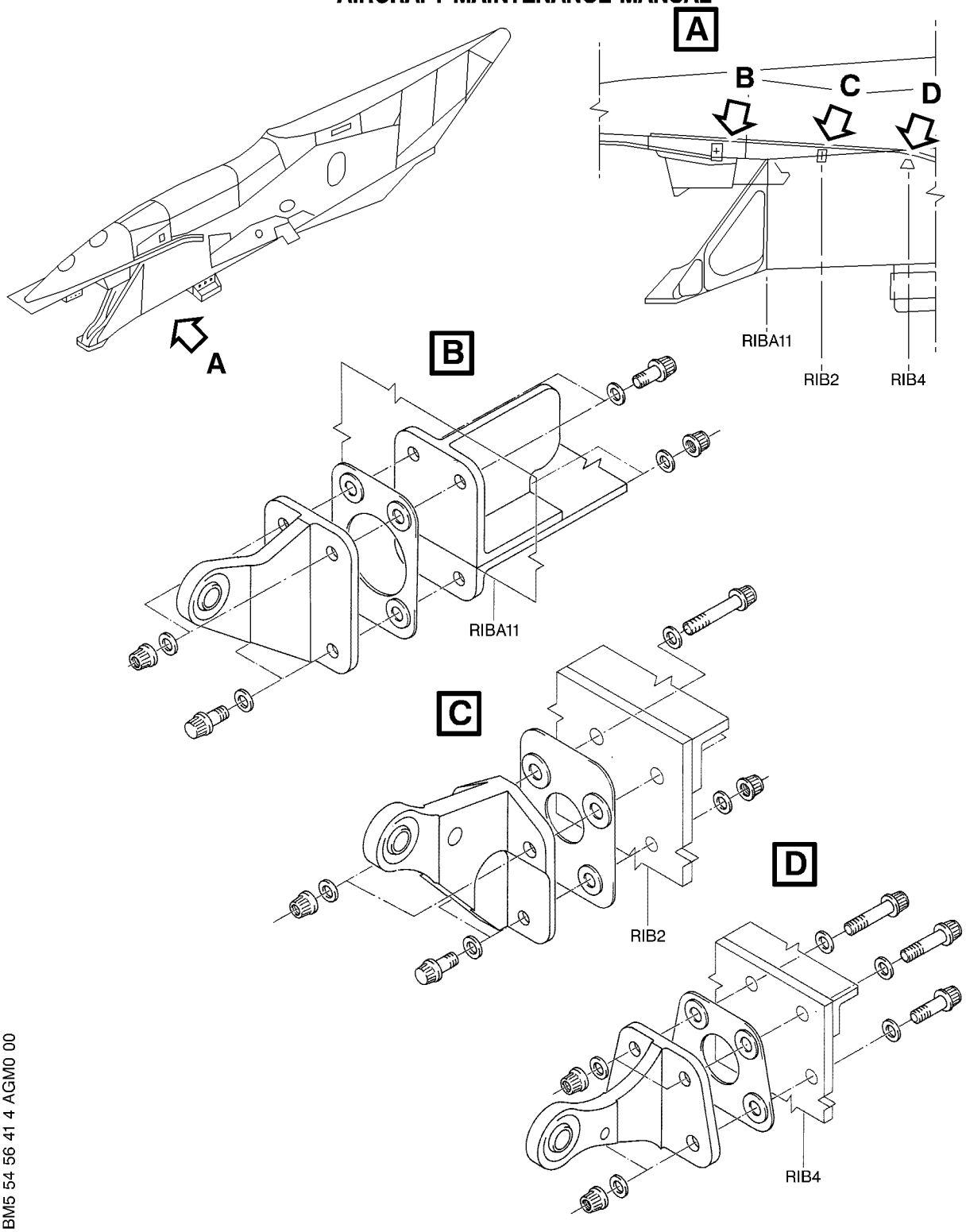
(d)Install side skin panels :

1 On left side pylon : 413AL (414AR), 411DL (412DL), 413BL and 413CL (414CR).

2 On right side pylon : 423AL (424AR), 421DL (422DR), 423BL and 423CL (424CL).

(e)Remove pylon access platforms.

(f)Install engine cowls (Ref. 71-13-01, 73-13-02, 71-13-03, P. Block 401).



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Fan Reverser Hinge Fittings
Figure 401

HINGE FITTING - FAN AND THRUST REVERSER - INSPECTION/CHECK

1. Reason for the Job

A. Inspection during Scheduled Maintenance.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Adjustable Access Platform
B. Material No. 11-003	Cleaning Agent (Ref. 20-31-00)
Referenced Procedure - 71-13-00, P. Block 301	Cowl Doors

3. Procedure

A. Job Set-Up

(1)Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT	LOCATION
133VU	ENG1 & 2/START/CTL/WARM	1KG	335/R68
133VU	ENG1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENG1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENG1/REV/CTL	1KM	332/U69
133VU	ENG2/REV/CTL	2KM	331/V74
133VU	ENG1/THRUST REVERSER LOCK	45KM	332/U67
133VU	ENG2/THRUST REVERSER LOCK	44KM	331/V75

(2)Open the fan cowls and the fan thrust reverser cowls:
435AL, 436AR, 445AL, 446AR, 451AR, 452AR, 461AL and 462AR.

(3)Put an access platform at pylons.

B. Cleaning of the structure

WARNING : USE SOLVENTS/CLEANING AGENTS, SEALANTS AND OTHER SPECIAL MATERIALS ONLY WITH A GOOD FLOW OF AIR THROUGH THE WORK AREA. THESE MATERIALS ARE POISONOUS AND FLAMMABLE AND SKIN IRRITANTS.
OBEY THE MANUFACTURERS INSTRUCTIONS.
PUT ON PROTECTIVE CLOTHING.
DO NOT GET THEM IN YOUR MOUTH.
DO NOT SMOKE.
DO NOT BREATHE THE GAS.
GET MEDICAL HELP IF YOUR SKIN OR EYES BECOME IRRITATED.

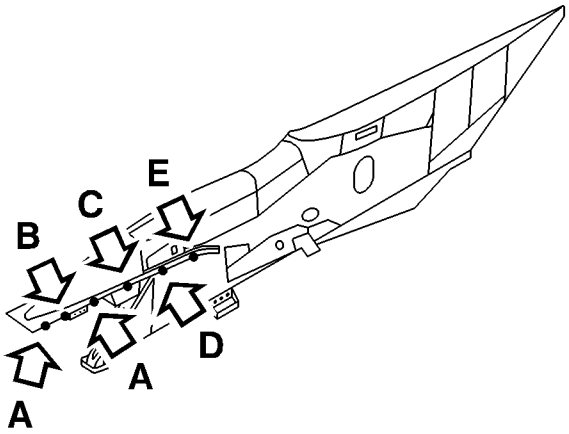
(1)Clean the inspection surface with cleaning agents and a lint-free cotton cloth, if necessary.

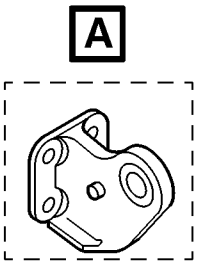
C. Inspection (Ref. Fig. 601)

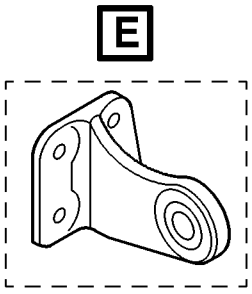
(1)Do a detailed visual inspection of the engine cowl hinge fittings (including nacelle hinge side). This inspection includes the left and right sides.
(2)Make sure that there is no:
- Corrosion damage
- Superficial wear
- Deformation
- Structure defects
- Bore deformation
- Wear on bore

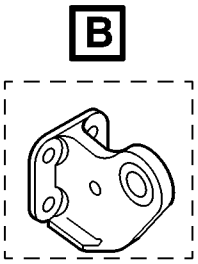
NOTE : If you find damage, a structural repair must be carried out, or the component must be replaced.

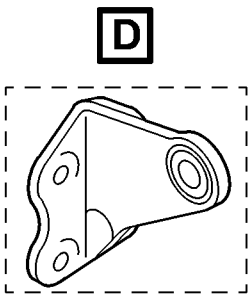
C. Close-Up
(1)Close the fan cowls and the fan thrust reverser cowls:
435AL, 436AR, 445AL, 446AR, 451AR, 452AR, 461AL and 462AR.
(2)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

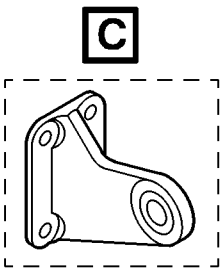












INSPECTION AREA

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Cowl Hinge Fittings
Figure 601

HINGE FITTING - FAN AND THRUST REVERSER - INSPECTION/CHECK

1. Reason for the Job

A. Inspection during Scheduled Maintenance.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Adjustable Access Platform
B. Material No. 11-003	Cleaning Agent (Ref. 20-31-00)
Referenced Procedure - 71-13-00, P. Block 301	Cowl Doors

3. Procedure

A. Job Set-Up

(1)Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT	LOCATION
133VU	ENG1 & 2/START/CTL/WARM	1KG	335/R68
133VU	ENG1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENG1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENG1/REV/CTL	1KM	332/U69
133VU	ENG2/REV/CTL	2KM	331/V74
133VU	ENG1/THRUST REVERSER LOCK	45KM	332/U67
133VU	ENG2/THRUST REVERSER LOCK	44KM	331/V75

(2)Open the fan cowls and the fan thrust reverser cowls:
435AL, 436AR, 445AL, 446AR, 451AR, 452AR, 461AL and 462AR.

(3)Put an access platform at pylons.

B. Cleaning of the structure

WARNING : USE SOLVENTS/CLEANING AGENTS, SEALANTS AND OTHER SPECIAL MATERIALS ONLY WITH A GOOD FLOW OF AIR THROUGH THE WORK AREA. THESE MATERIALS ARE POISONOUS AND FLAMMABLE AND SKIN IRRITANTS.
OBEY THE MANUFACTURERS INSTRUCTIONS.
PUT ON PROTECTIVE CLOTHING.
DO NOT GET THEM IN YOUR MOUTH.
DO NOT SMOKE.
DO NOT BREATHE THE GAS.
GET MEDICAL HELP IF YOUR SKIN OR EYES BECOME IRRITATED.

(1)Clean the inspection surface with cleaning agents and a lint-free cotton cloth, if necessary.

C. Inspection (Ref. Fig. 601)

(1)Do a detailed visual inspection of the engine cowl hinge fittings (including nacelle hinge side). This inspection includes the left and right sides.

(2)Make sure that there is no:

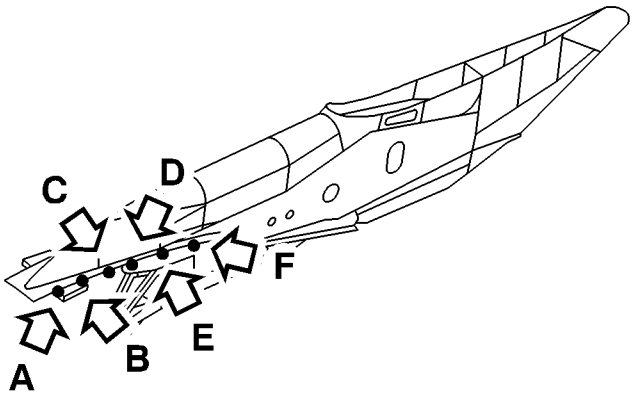
- Corrosion damage
- Superficial wear
- Deformation
- Structure defects
- Bore deformation
- Wear on bore

NOTE : If you find damage, a structural repair must be carried out, or the component must be replaced.

C. Close-Up

(1)Close the fan cowls and the fan thrust reverser cowls:
435AL, 436AR, 445AL, 446AR, 451AR, 452AR, 461AL and 462AR.

(2)Make certain that working area is clean and clear of tools and miscellaneous items of equipment.



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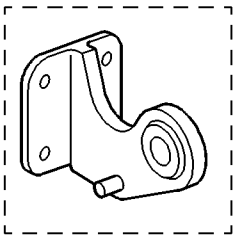

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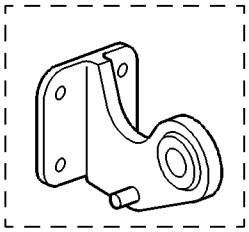

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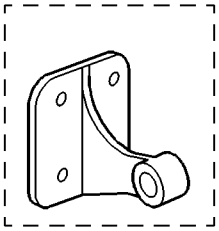

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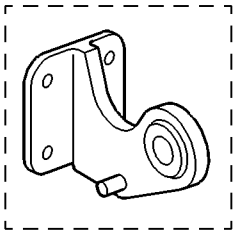

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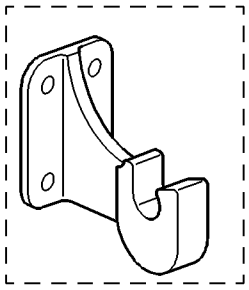

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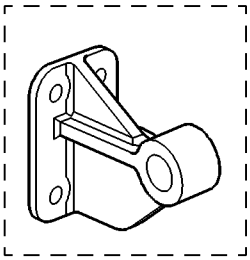

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INSPECTION AREA

Cowl Hinge Fittings
Figure 601